SHIFT IN METHODS: FROM QUANTITATIVE TO QUALITATIVE

Methodological awareness is an important mental resource in research studies. It can be acquired by exposure to almost any intelligent methodological discussion, whether from positivist, naturalistic, constructivist, or postmodern paradigms, as well as from careful consideration of research studies done by others. Particular techniques developed originally to fulfill the requirements of particular paradigms can often be used for other purposes and from within other paradigms if need be. Before examining shift in paradigms and methods, giving some related definitions may be helpful.

“Theory: A set of well-developed concepts related through statements of relationship, which together constitute an integrated framework that can be used to explain or predict phenomena” (Strauss and Corbin, 1998; p.15)

“Methodology: A way of thinking about and studying social reality.” (Strauss and Corbin, 1998; p.3)

“Methods: A set of procedures and techniques for gathering and analyzing data.” (Strauss and Corbin, 1998; p.3)

“Paradigm is a loose collection of logically related assumptions, concepts, or propositions that orient thinking and research” (Bogdan and Biklen, 1998; p.22)

“Paradigm is a set of basic beliefs” (Guba and Lincoln, 1998; p.200)

“A paradigm is basically a worldview or a "set of propositions that explain how the world is perceived," and a paradigm of inquiry informs a researcher as to "what is important, what is legitimate, what is reasonable" concerning systematic inquiry”.

Each paradigm in social sciences includes four sets of basic assumptions related to ontology, epistemology, human nature and methodology. All social scientist focuses on their subject via explicit or implicit assumptions about the nature of social world and the way in which it may be investigated. Burrell and Morgan (1979) locate each of these assumptions along a subjective - objective dimension.

Figure 1. The Subjective- Objective Dimension

<table>
<thead>
<tr>
<th>The Subjectivist Approach to Social Sciences</th>
<th>The Objectivist Approach to Social Sciences</th>
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<tbody>
<tr>
<td>Nominalism</td>
<td>Realism</td>
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<tr>
<td>Anti-positivism</td>
<td>Positivism</td>
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<tr>
<td>Voluntarism</td>
<td>Determinism</td>
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<td>Ideographic</td>
<td>Nomothetic</td>
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The first assumption is related with the ontological nature. The assumptions of an ontological nature deal with the very essence of the phenomena under investigation. The basic ontological questions are as the following:

- “Whether the ‘reality’ to be investigated is external to the individual (realist position) or the product of individual conscious (nominalist position)”,”
- “Whether ‘reality’ is of an ‘objective’ nature (realist position) or the product of individual cognition(nominalist position)”
- “Whether ‘reality’ is a given ‘out there’ in the world (realist position) or the product of one’s mind (nominalist position)”,” (Burrell and Morgan, 1979; p.1).
• “What is the form and nature of reality and, therefore, what is there that can be known about it?” (Guba and Lincoln, 1998; p.201)

As second assumption, epistemological nature concerns the grounds of knowledge, that is, how one can begin to understand the world and communicate this as knowledge to fellow human beings. These assumptions lead to produce ideas about what forms of knowledge can be obtained and how one can sort out what is to be regarded as true or false. This issue is called “positivism - anti-positivism debate”. The positivist epistemology views knowledge as hard, real, and capable of transmission of in tangible forms. It also tries to explain and predict what happens in the social world by searching for regularities and causal relationships between its constituent elements (Trosow, 2001). The epistemology of anti-positivist views the social world is essentially relativistic and can only been understood from the point of view of the individuals involved in the activities that are to be studied.

Third assumption is related to the essence of human nature characterized as voluntarism – determinism debate. For the deterministic view, human and his activities determined by the situations and the environment (Burrell and Morgan, 1979). The voluntarist position view human is completely autonomous and free-willed.

The last assumptions related with the methodology focus on the manner in which one attempts to identify, gather, and record knowledge of reality. Trosow (2001) claims that methodology can be seen as a bridge between the ontological and epistemological assumptions. The nomothetic approach to social sciences uses the methods and procedures of natural sciences with an emphasis on systematic protocol and technique. It focuses on the testing hypotheses in accordance with the canons of scientific rigour. Surveys, questionnaires, personality tests and standardized instruments are dominantly used tools that comprise this methodology. However, the ideographic approach is based on the view that one can only understand the social world by obtaining first-hand knowledge of the subject under investigation, so this view attempts to get inside situations by attempting to understand the experiences and flow of the subject. Interviews, personal history, participant observation, and case studies are frequently used tools in this methodology.

The paradigm emphasis on the objectivist approach to social sciences is called “The Positivist/Rationalist Paradigm”. Şimşek (1997) mentions about a dramatic shift in the mode of social inquiry which is part of a larger transformation in many domains of how see and understand the world. Explaining the picture of the paradigm in decline may be a good start-point for exploring the degree of this large-scale restructuring and the place of methodological shift within it.

Declining Paradigm

The roots of the declining paradigm guiding us to understand the world and act upon it accordingly throughout the almost three hundred years can be traced back to the beginning of the Modern Age, 1500 A.D. (Yıldırım and Şimşek, 1999; Şimşek, 1997). With the Roneasans Act, the intellectual activity of the Medieval Europe based on a metaphysic understanding of the world began to give its place to a critical intellectual activity. Reformation activities of Europe in many fields including art, political order, religion, and philosophy incorporated a fresh new look in scientific activity. Then, with the Enlightenment Period of seventeenth and eighteenth centuries, the Age of Reason was started. The Enlightenment was the idea emphasizing that man’s happiness is based on the application of ‘right reason’ to human, spiritual, and natural order (Şimşek, 1997). This idea supposes that rather than being in the hands of God alone, man was capable of pulling himself up toward some higher state by using his intellect. Bacon, Hume, Descartes, Wesley, Newton, Rousseau, Locke, Galileo, Voltaire, Kant, and Adam Smith are some of the names associated with the Enlightenment (Şimşek, 1997; Burrell and Morgan, 1979).

For example, Martin Luther one of the most important founding fathers of the laws and principles that have shaped the societies to this day realized the secularization of religion with the Protestant revolution of reformation; Bacon, Kant and Descartes shaped the foundation of modern Philosophy, mathematics, and logic. By focusing on the role of
government and its position to individuals, Voltaire and Rousseau reformulated the basics of modern democracies. Lock and Hume formulated the principles of empiricism and realism by directing the major problems of philosophy to the problem of epistemology. Galileo and Newton shaped the mode of modern science thinking composing the basis of positivist/relativist paradigm (Yıldırım and Şimşek, 1999)

The Positivist/Relativist Paradigm

As can be understood from its name, this paradigm is characterized by positivist, realistic, determinist, and nomothetic (Smircich and Calas, 1987; Putnam, 1983; Burrell and Morgan, 1979). The positivist/rational paradigm has the following characteristics:

1. **Reality is simple**: The universe is a cumulation of noninteractive, nondiverse, finely divided distinctive and separate systems. A phenomenon is the sum of its parts,

2. **Hierarchy as a concept of order**: Systems can be classified in a hierarchical order from the simplest to the most complex. "This was reflected in social systems which cast certain members of society as second-class citizens (such as women and persons of color), in monarchical systems which supported the ‘divine right of kings,’ in the periodic table of chemical elements, and in the common assumptions regarding how the natural world was taxonomically ordered into increasingly complex organisms",

3. **The universe is mechanically**: The universe is a clock-like mechanical object, at machinery, "When put into motion, it simply moves until it winds down or runs out of energy",

4. **Direction is determinate**: If the universe is a clock or machine, then its future is strictly determined. Given a great enough number of mathematical models and enough computational power, the behavior of any system could ultimately be predicted,

5. **The causality of relationships is linear**: In a Newtonian-Cartesian universe, if we know the causal relationships among parts, then we can explain the outcomes,

6. **Change is quantitative and assembly-like**: Systems progress in an assembly-like manner, with change adding a new part or dimension as time moves the "assembly line" forward. Rarely is there qualitative change or discontinuous redefinition,

7. **Objectivity is not possible but essential**: In a Cartesian universe, the ways of knowing are explained in terms of "the use of reasoning as a way of coming to understanding, and the distancing of the observer from the thing to be observed." (Şimşek, 1997).

This paradigm dominant in theory and research in hard science disciplines were unleashed by the publication of Newton’s Principia Mathematica. In Newton’s scientific paradigm, the machine metaphor was used to understand the universe. This mechanical worldview includes three basic assumptions: (1) There is a set of forces governing the fundamental level of reality (the basic building blocks). Exploring this fundamental level and the laws that govern it helps us to predict the future of the world, (2) The laws that explain the small scale relations must be identical to those that apply on the very large scale, (3) Scientist, researchers, observers can be isolated from the experiments. This is important for perceiving the world objectively (Yıldırım and Şimşek, 1999).

It can be said that this large-scale paradigm shift emerged during the period of the 16th and 18th century is the basis or a common reference point of the approaches named as postpositivism, postindustrial, postmodern, postcapitalist, poststructuralism, and postempiricism.

Positivism was based on reason and observation, and tried to find Truth and grand theories explaining everything in the universe. Taylor’s principle of scientific management is a good example of the idea that human perfection is possible through scientific progress.

Positivism reduces phenomena to observable and measurable qualities by removing them from the surrounding processes and factors. So complex social processes can be studied with observable and measurable aspects of society.

In a similar way, functionalism one of the dominant view of in organizational analysis and behavioral view one of the dominant view in the fields of psychology, social psychology, and education are the extensions of a grand root paradigm. Functionalists treat social phenomena as concrete, materialistic entities. For the functionalists,
individuals are products of their environment, so they respond to external stimuli in mechanically controlled ways (Putnam, 1983). The external world determines or shapes individual options for appropriate behaviors. Moreover, they use the methods of the natural sciences. They aim to establish generalizations or universal knowledge or laws by deducing theoretical constructs from empirical data (Sackman, 1991).

**Basic Characteristics of the Quantitative Method**

When social sciences emerged at the turn of the twentieth century, researchers studying in these fields found themselves within the positivist/rationalist paradigm of natural sciences. So, they adopt the principles and techniques used in natural sciences - quantitative research methods - for investigating human, society and culture. Some basic characteristics of quantitative research are as the following:

1. Quantitative approaches to collecting data rely on survey research methods, questionnaires, and document analysis for obtaining and scoring information on the elements within the conceptual domain,
2. Quantitative researchers claim that reality exists and they can control it objectively through testing and verifying hypothesis often by means of experimental and manipulative methods (Toma, 1997),
3. Quantitative researchers views reality as a concrete structure, tries to explain and predict what happens in the social world for searching regularities and causal relationship between its constituent elements.
4. Quantitative approach adopts deductive manner. Goetz and LeCompte (1984) state that "purely deductive research begins with a theoretical system, develops operational definitions of the propositions and concepts of the theory, and matches them empirically to some body of data" (p.4).

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Purpose</th>
<th>Approach</th>
<th>Researcher’s Role</th>
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<tbody>
<tr>
<td>Social facts have an objective reality</td>
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<tr>
<td>Primacy of Method</td>
<td>Generalizability</td>
<td>Begins with hypothesis and theories</td>
<td>Detachment and impartiality</td>
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<td>Variables can identified and relationships measured</td>
<td>Prediction</td>
<td>Manipulation and control</td>
<td>Objective portrayal</td>
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<td>Outsider's point of view</td>
<td>Causal Explanations</td>
<td>Uses formal instruments</td>
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<td>Experimentation</td>
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<td>Deductive</td>
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<td>Component analysis</td>
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<td>Seeks consensus, the norm</td>
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<td></td>
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<td>Reduces data to numerical indices</td>
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**Table 1. The Prepositions of Quantitative Mode of Inquiry (Glesne and Peshkin, 1992, p.7)**

**The Picture of Emerging Paradigm**

As an alternative to the positivist/rationalist paradigm, new paradigm emerged at the beginning of the twentieth century. Yıldırım and Şimşek (1999) state that a few scholars initially trained within the positivist/realist world view began to develop a radically different world view. In physics, Einstein’s theory of relativity bringing up the influence of the observer on the process leads to shake the one of the main building blocks of the past paradigm. Moreover, Hiesenberg’s “indeterminacy principle” causes to interrogate the objectivity of the positivist/rationalist paradigm. According to this principle, “at the microscopic level any act of measurement - even merely looking with light rays - disturbs
the thing being studied” (Schwarts and Ogilvy, cited in Yıldırım and Şimşek, 1999). Furthermore, John Bell’s theorem rejected the universe is made up of independent separate parts by claiming all events and things are interconnected within an indivisible whole. Following, by stating “ not only the part be found in the entirety, but the entire reality can also be found in the part”, David Bohm drew a holographic picture of the universe (Schwarts and Ogilvy, cited in Yıldırım and Şimşek, 1999).

The postpositivist/postrationalist paradigm (equally, postmodern, poststructural, postindustrial, postempiricist, postcapitalist) affecting many domains of society and advocating the requirement of understanding the world with a new glasses has the following qualities:

1. **Reality is complex.** Variation, diversity and interactivity are inherent characteristics of all phenomena and systems with "...each system developing properties which are unique to the system" (Lincoln, 1989, p. 69; cited in Yıldırım and Şimşek, 1999).

2. **Heterarchy is order.** Systems are not hierarchical and pyramidal but heterarchical in which mutual constraints, influences, and movements are unpredictable.

3. **The universe is holographic.** The universe cannot be understood mechanically by taking apart components and reassembling them in the reverse order. Everything is interconnected, with each part containing information about the whole.

4. **The direction is indeterminate.** Possibilities can be known, but precise outcomes cannot be predicted, "...ambiguity about the future is a condition of nature" (Lincoln, 1989, p. 71; cited in Yıldırım and Şimşek, 1999).

5. **Relationships are nonlinear and mutually causal.** Rather than A causing B, perhaps A and B interact in such a way that they evolve and change together.

6. **Change is morphogenetic** with "a sense of order emerging from disorder." Systems are diverse, open, complex, mutually causal, and indeterminate leading to qualitative rather than quantitative changes (Lincoln, 1989, p. 71; cited in Yıldırım and Şimşek, 1999).

7. **Observers are participants with perspective.** The observer is not isolated or distant from the observed. There is no such thing as objectivity, but there is perspective. "Perspective connotes a view at a distance from a particular focus. Where we look from affects what we see. No single discipline ever gives a complete picture. A whole picture is an image generated morphogenetically from multiple perspectives" (Lincoln, 1989, p. 72; cited in Yıldırım and Şimşek, 1999).

By rejecting the existence of singular truth, the postpositivist/postrational view adopts subject-centered pluralistic perspective. In this view, it is believed that individuals create their own environments. They act and interpret their interactions with a sense of free will and choice. So, they have a critical role in shaping environmental and organizational realities (Putnam, 1983).

### Basic Characteristics of Qualitative Method

Related with this general paradigm, an observable shift in how we do social research has emerged. The social sciences and humanities have focused together in a mutual manner on an interpretive, qualitative approach to research and theory.

Qualitative research is a field of inquiry and qualitative researcher seeks to preserve the form and the content of human behavior and to analyze its qualities, rather than subject it to mathematical or other formal transformations (Silverman, 1993). The term of qualitative research is surrounded with a complex, interconnected family terms, concepts and assumptions (Denzin and Lincoln, 1994). When reviewed the literature, the following features of qualitative research are observed:

1. Qualitative research can be defined as multi-method in focus, involving an, interpretive, naturalistic approach its subject matter,

2. A qualitative researcher studies things in their natural settings, attempting to make sense people bring to them, in other words researcher learns from becoming part of process and from combining his/her experience with unobtrusive measures, interviews, and other methods (emic approach),
3. Qualitative research is descriptive. The data collected analyzed with words rather than numbers,
4. Qualitative methods are oriented toward exploration, discovery, and inductive logic, thus a qualitative methodologist focus on understanding the multiple interrelationships among dimensions that emerge from the data collected,
5. Process and meaning are of essential concerns to the qualitative research,
6. A qualitative researcher analyzes the data with an inductive manner,
7. The purpose is to gain holistic overview of the context under investigation, its logic, its arrangements, its explicit and implicit rules,

Table 2. The Prepositions of Qualitative Mode of Inquiry (Glesne and Peshkin, 1992, p.7)

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Purpose</th>
<th>Approach</th>
<th>Researcher’s Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Reality is socially constructed</td>
<td>• Contextualizing</td>
<td>• Ends with hypothesis and grounded theory</td>
<td>• Personal involvement and partiality</td>
</tr>
<tr>
<td>• Primacy of subject matter</td>
<td>• Interpretation</td>
<td>• Emergence and portrayal</td>
<td>• Empathic understanding</td>
</tr>
<tr>
<td>• Variables are complex, interwoven, and difficult to measure</td>
<td>• Understanding actors’ perspectives</td>
<td>• Researcher as instrument</td>
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<tr>
<td>• Insider's point of view</td>
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<td>• Naturalistic</td>
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<td></td>
<td></td>
<td>• Inductive</td>
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<td></td>
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<td>• Searches for patterns</td>
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<td></td>
<td></td>
<td>• Seeks pluralism, complexity</td>
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<td>• Descriptive write-up</td>
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Guba and Lincoln (1994, cited in Healy and Perry, 2000) synthesize scientific paradigms into four categories: (1) positivism, (2) realism, (3) critical theory, and (4) constructivism. Positivism predominates in science and science quantitatively measures independent facts about a single apprehensible reality, while next three paradigms are relevant to much qualitative research. Healy and Perry (2000) represent methodologies and their related paradigms in a range in figure 2 (p. 125).

Figure 2. A representative range of methodologies and their related paradigms
REFERENCES


