CRITICAL EVALUATION OF DIFFERENT RESEARCH PARADIGMS

Abstract: The main purpose of this piece is to offer a comprehensive picture of how different research paradigms can make a distinctive influence on an overall research design. It commences with an outline of a few philosophical ideas related to the perception of the world, change that occurs in it, as well as knowledge creation. It moves on to explaining the concept of a researcher’s paradigm in general and how its main aspects: epistemology, ontology, axiology and methodology, mutually interlink. A full account of these aspects is given and their importance for any research is explained. This is followed by an elaboration of different versions of paradigms – from realism to positivism and from social constructivism to pragmatism. A critical explanation is given of how the methodological debate about ‘incompatibility thesis’ and ‘paradigm purity’ led to a paradigm shift with an introduction of pragmatism as an approach that integrates qualitative and quantitative methods. Finally, some general aspects of a researcher’s reflexivity and ethical stance are also proposed, as these are the key issues to take into consideration pre/during/post any research.

Key words: Epistemology, Ontology, Axiology, Methodology, Pragmatism

Preface

This important question was posed during one of the sessions of my Professional Doctorate in Occupational Psychology: What counts as truth, belief, evidence and knowledge?

The moment came when my memories of almost forgotten philosophy, an area that significantly influenced the birth of psychology, were triggered. I found myself reading some of the Plato’s books and therefore the following quote being proposed:

‘Meno raised a question of great importance: And how are you going to search for something, Socrates, when you have no idea whatsoever what it

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is? What kind of unknown somewhat will you propose as the object of your search? And if you are lucky enough to come across it, how will you know it is that unknown somewhat?’

‘The act of questioning presupposes the possession of knowledge or belief: in questioning the questioner discloses not only the ignorance which his question expresses but also the knowledge or belief which allows him to diagnose his own ignorance and to formulate his question’ (Melling, 1987).

Perhaps, this piece will open up some new questions, while at the same time an attempt will be made to offer my insights on the impact of the research paradigms in general, as well as for me as an emerging researcher, for the overall research process.

Some brief philosophical underpinning

Plato was one of the founding fathers of philosophy and one of his most well known theories is about the world of forms. Through philosophical reasoning he argued that the world we live in is only one of appearances and the world of forms is the world of reality; however we cannot see it yet. The world of appearances is always changing and decaying and has many imperfections, whereas the world of forms is immutable, eternal and perfect. As well as this, whenever we see something in this world, it is merely a reflection of its form in the world of forms. However, Aristotle believed that ideas do not exist separately from visible things, but that the essential nature of anything is the Idea in it (Redhead, 1995).

‘The ideology of representation is the set of beliefs and practices stemming from the idea that various entities (meanings, motives, things, essences, reality, underlying patterns, cause, what is significant, intention, meaning, facts, objects and so on) underlie or pre-exist their surface representations (documents, appearances, signs, images, actions, behaviour, language, knowledge and so on). In science, as elsewhere, the main business is to establish and justify connections between the surface representations and the underlying entities’ (Richardson, 1996: 16).

Thomas Aquinas was a leading philosopher and theologian in the 11th century. He stated that “motion is nothing else than the reduction of something from potentiality to actuality.” He believed that motion is a matter of change and everything that changes is changed by something else.

Boethius posed that ‘knowledge is not based on the thing known but on the nature of the knower’. He believed that nothing happens by chance, everything is a direct result of cause and effect, while Plato suggested that our whole life is a pursuit of knowledge and an understanding of the world.
Critical evaluation of different research paradigms

Research

Put into the general perspective of research, which is according to Shuttleworth (2008) considered as ‘any gathering of data, information and facts for the advancement of knowledge’ or as an ‘investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts or practical application of such new or revised theories or laws (Merriam-Webster Online Dictionary), it could be inferred that the process of research inevitably brings change in knowledge which is, among other factors, influenced by a researcher’s intentions of how to accomplish this change.

These intentions are guided by researcher’s paradigm (personal view and understanding of the world, or belief systems, (Guba & Lincoln, 1994; cited in Tashakkori & Teddlie, 1998) that frames each research process in a unique manner. Articulating rationale of the research ‘defends’ why specific choices and decisions had been made in the process and, at the same time, it points strongly to the importance of a ‘human engagement in changing the beliefs and practices that govern research field’ (Kuhn, 1996; cited in Morgan, 2007). It could be also viewed as a journey that enriches the personal growth of a researcher.

For a researcher, it is important to understand that there are different purposes of any research with alternative epistemological underpinnings which allow for a choice of alternative research methodology. Researcher’s awareness and a critical stance of alternatives and different perspectives are crucial.

The researcher’s paradigm (‘the set of beliefs and practices’ - Morgan, 2007:47) is based on several aspects: ontology, axiology, epistemology, methodology and reflexivity. While ontology looks into the nature of reality, axiology represents an ethical value system of a researcher, (Hanson, et al., 2005; cited in Morgan, 2007).

Epistemology relates to the theory of knowledge - understanding the nature of knowledge, its scope, as well as the validity and reliability of claims to knowledge (Willig, 2008). Specific paradigm choice influences the research questions and the research methodology (Morgan, 2007) which taps into the research process and ‘identifies a general approach to studying research topics’ (Silverman, 1993).

While (Mead, 1934; cited in Richardson, 1996) advocates that reflexivity is “the turning back of the experience of the individual upon him/
herself” (Gergen and Gergen, 1991; cited in Richardson, 1996) propose that it should be utilised as an extension of understanding. Reflexivity is seen as a personal critique on the research process, demonstrating an awareness of the manner in which the researcher constructs the meaning throughout (Willig, 2008). As (Nightingale and Cromby, 1999; cited in Willig, 2008) pointed out ‘it explores the ways in which a researcher’s involvement with a particular study influences, acts upon and informs such research.’

By posing the following three questions, Willig (2008) is emphasising the interrelatedness of all aspects that determine a researcher’s paradigm:

- What kind of knowledge does the methodology aim to produce?
- What kinds of assumptions does the methodology make about the world?
- How does the methodology conceptualise the role of the researcher in the research process?

Paradigm

Morgan (2007) proposes different versions of paradigms which he defines as ‘shared belief systems that influence the kinds of knowledge researchers seek and how they interpret the evidence they collect,’ whereas (Creswell, 1998; cited in Morgan, 2007) sees them as a ‘basic set of assumptions that guide enquiries.’ (Guba and Lincoln, 1988; cited in Morgan, 2007), further elaborate how different assumptions about ontology limit assumptions about epistemology which in turn put limitations to methodological assumptions. This implies the hierarchal categorisation of assumptions with ones about the nature of reality put onto the highest pedestal.

However, this might not be the case and paradigms are either seen as worldviews (Schwandt, 1989; cited in Morgan, 2007), epistemological stances, shared beliefs among members of a specialty area (Patton, 1982; cited in Morgan, 2007) or as model examples of research; the main level of their differentiation is how general or specific a researcher’s belief system might be.

Paradigms as worldviews take into account an over-arching point of view that incorporates thoughts, experiences, beliefs, values, ethics and even aesthetics (Morgan, 2007). Their limitation is an ever-so broad perspective, but they put emphasis on cultural and individual aspects. Paradigms as epistemological stances funnel down a researcher’s potential approach which is now based on specific system of beliefs, be it positivism or social constructivism, as an example.
Paradigms are represented as shared beliefs among members of a specialty area in terms of meaningfulness of research questions and appropriateness of methodology (Morgan, 2007). Paradigms seen as model examples of research represent the shared views about which research questions and methodology should be utilised, but they have narrow applications. Morgan (2007) claims that the purpose of the research appropriates one or another paradigm, but they should not be considered as ‘mutually exclusive’.

Different types of paradigm

(Rogers, 1991; cited in Curt, 1994) stated that ‘just as the term ‘nouvelle cuisine’ has been repeatedly used for at least a hundred years to describe whatever was the latest fashion in cookery, psychology, even in its much shorter history, has been continually confronted with ‘new paradigms’. Each one has been presented as a dramatic refutation of a worn-out previous order, offering fresh insights and innovative solutions’. In this respect, (Kuhn, 1970; cited in Morgan, 2007) introduced the concept of paradigm shifts to capture changes within research fields.

However, before a full explanation of the rationale for the paradigm shift is given, it is important to introduce different types of paradigm in order to understand how they might influence the research process in entirely different manner.

One of the paradigms is realism which finds its main base in utilising a quantitative methodology. It is based on the premise that the external world exists independent from thought or perception. Popper was an influential author who named it the scientific method (hypothetico-deductive).

Positivism that originates from the French philosopher August Comte also looks for tangible aspects where certain hypotheses are either being accepted or rejected. According to (Lincoln and Guba, 1985; cited in Tashakkori & Teddlie, 1998) from the positivists’ point of view, there is only one reality, the knower and the known are independent, inquiry is value free and emphasis is on the theory. The key is for the researcher to be objective and unbiased by attempting to identify causal relationships through objective measurement and quantitative analysis (Firestone, 1987). It is referred to as the ‘correspondence theory of truth’, meaning that phenomena directly determine our perception influencing a direct correspondence between things and their representation (Willig, 2008). On the other hand, relativism is linked with context and culture and according to (Edwards et al., 1995;
According to Morgan (2007), social science methodology puts a firm stamp on discovering what the nature of truth and reality is under the umbrella of metaphysical issues. However, the key question is of the relationship between these issues and the actual research practice from the feasible point of view.

According to Burkitt’s views (1999) ‘reality is not a constant, but an ever-changing realm that is both discursively and practically constructed by people’. Indeed, social constructivism (interpretivists’ view) is influenced by the social context of language and finds its main base in utilising a qualitative methodology (Schwandt, 1989; cited in Morgan, 2007). ‘Representations of the world are achieved through linguistic representations (discourses) – these are not an objective reality but are constructed through both objects and subjects’ (Henwood & Pigeon, 1992; cited in Willig, 2008).

According to (Lincoln and Guba, 1985; cited in Tashakkori & Teddlie, 1998) from the constructivists’ point of view, there are multiple constructed realities, the knower and the known are inseparable, any inquiry is value-bound and subjective, and it is not possible to distinguish causes from effects. This might lead to different interpretations due to changes of the circumstances during the research. According to Burr (1995), researchers need to adopt a critical approach towards understanding of the world, as knowledge is not a direct perception of reality.

Finally, pragmatism (Howe, 1988) has a 'loose' base with a researcher’s decision what ‘fits the best’ the rationale of the research and sees both methodologies (quantitative and qualitative) as compatible and utilised within different phases of the research process. ‘For pragmatists, values and visions of human action and interaction precede a search for descriptions, theories, explanations, and narratives. Pragmatic research is driven by anticipated consequences. Pragmatic choices about what to research and how to go about it are conditioned by where we want to go in the broadest senses… Beginning with what he or she thinks is known and looking to the consequences he or she desires, our pragmatist would pick and choose how and what to research and what to do’ (Cherryholmes, 1992; cited in Tashakkori and Teddlie, 1998). This means that the paradigm of pragmatism is based on practical and applied philosophy (Tashakkori and Teddlie, 1998) and influenced by individual, social and cultural milieu, at the same time (Morgan, 2007).
(Cherryholmes, 1992; cited in Tashakkori and Teddlie, 1998) state that pragmatists believe in an external reality, but do not believe in possibility to fully determine certain concepts, such as ‘truth’, as ‘knowledge claims cannot be totally abstracted from contingent beliefs, interests, and projects’. Therefore, it is difficult to fully ‘unpick’ causal relationships.

Methodological debate

In the process of the research design, it is important to be aware of different approaches to research, such as utilising quantitative (general) and qualitative (specific) methods, what their distinction is, as well as their strengths and weaknesses. Bryman (2006) makes a distinction between ‘hard’ data collected in ‘artificial’ settings and ‘rich’ data collected within ‘natural’ settings. Quantitative methods seek to discover causality between two variables, while qualitative methods seek explanation or understanding of social phenomena and their contexts.

Within the methodological debate, (Smith and Heshusius, 1986; cited in Tashakkori and Teddlie, 1998) coined a term ‘incompatibility thesis’, meaning that there is no much point in ‘mixing’ different paradigms that are based on different methodologies. Therefore, the only answer was to accept the ‘paradigm purity’ (Smith, 1994, cited in Tashakkori and Teddlie, 1998) where there is the dichotomy of world views and research methods (Creswell and Plano Clark, 2007) and utilising two different approaches is mutually exclusive (Sandelowski, 2001). (Kuhn’s, 1996; cited in Morgan, 2007) standpoint was that there is ‘incommensurability’ of paradigms, i.e. the lack of correspondence between ideas of different paradigms.

However, Johnson and Onwuegbuzie, 2004 proposed that mixed methods could bridge the gap between the quantitative and qualitative positions. Pragmatic perspective focuses on ‘shared meanings and joint action’ (Morgan, 2007) where there should be interlink between ‘lines of action’ (James and Mead; cited in Morgan, 2007), i.e. behaviour, beliefs underlying these behaviours and consequences of these behaviours (‘workability’, according to James and Dewey, cited in Morgan, 2007). Translated into a specific research, more of interlink between epistemology and methodology is being advocated, as well as between methodology and methods (Morgan, 2007).

Indeed, within a newly emerging paradigm of pragmatism (that stresses the importance of shared interactions), it was made possible to use both methodologies, where mixed, combined or integrated methods could
be executed in a sequential or a concurrent manner, thus addressing complex and multi-faceted research problems in a dynamic manner (Howe, 1988). This should potentially allow a more complete understanding of research problems (Creswell and Plano Clark, 2007) or capture the complexity of human phenomena more effectively (Sandelowski, 2001).

(Yin, 2006; cited in Greene, 2006) posed questions if the methods should be mixed within or across studies. The decision to utilise mixed methods (occurring at the same time and having equal weighting) will influence the need to use the triangulation design (Orum et al., 1991; cited in Willing, 2008) which might aid a better research reliability. It is possible for a researcher to utilise the embedded design (Caracelli and Greene, 1997; cited in Green, 2006) which is based on a dominant method, usually the quantitative methodology, and where the qualitative component has a secondary role. However, the exploratory design as a sequential design could be utilised, where the first phase qualitative, helps in the development of the quantitative phase (Creswell, et al., 2003; cited in Green, 2006).

It is clear that there are different routes that the researcher might take that influence research – inductive (qualitative) and deductive (quantitative). But, pragmatic paradigm allows the researcher to go back and forth between induction and deduction through a process of research inquiry (abductive approach), as ‘it is impossible to operate in either an exclusively theory – or data-driven fashion’ (Morgan, 2007). This research ‘journey’ moves on the axis of objectivity-subjectivity under the realm of inter-subjective approach (Morgan, 2007).

According to Bryman (2006), some of the benefits of mixed methods are in offering a more complete overview of the phenomenon under research investigation, neutralising weaknesses and enhancing strengths of certain methods to provide stronger inferences or offer answers to different research questions. Also, it is beneficial for hypotheses and instrument development and testing, as well as more profound explanation of findings.

However, there are some limitations, such as a lack of consistency in terms of what is considered by mixed methods (Bryman, 2007). It could either be viewed as collecting and analysing both types of data or it is related to the full integration of the two approaches (Creswell and Plano Clark, 2007). However, the problem might occur in terms of articulating how the two elements relate to one another. There is a distinction between partially mixed methods with the qualitative and quantitative phases being conducted independently before mixing occurs during the data interpretation stage, and fully mixed methods with mixing within the research objectives, the
types of data, analysis and inference.

(Mertens, 2003; cited in Tashakkori and Teddlie, 1998) stated that the methodological choice of a pragmatic paradigm does not answer a question of ‘practical for whom and to what end?’ Also, (Tashakkori and Teddlie, 2003; cited in Morgan, 2007) argued that the researchers emphasise the importance of the research question more than either the method or the paradigm. According to Johnson and Onwuegbuzie (2004) concurrent studies need to rely on a team of researchers, while (Ivankova, et al., 2006; cited in Morgan, 2007) pointed out that sequential studies are time and resources bound.

Nevertheless, Johnson and Onwuegbuzie (2004) claim that the most important issue is recognising the usefulness of both paradigms that mutually support each other in answering specific research questions, while (Hanson, et al., 2005) propose that mixing should occur throughout the research process. (Yin, 2006; cited in Green, 2006) agrees by stating ‘the more that a single study integrates mixed methods… the more that mixed methods research, as opposed to multiple studies, is taking place.’

**Research questions, sampling, validity and reliability**

Research questions need to be clear and specific (based on researcher’s epistemological and methodological framework) and focus on models, concepts or theories that could offer the relevant answers. At the same time, it is important to justify the research in terms of enhancing the knowledge base in a specific area of inquiry.

Research design needs to be feasible in terms of its scope (with necessary resources and access to the participants) and there should be a suitable linking of literature review, questions and design. The utility value of the research (Reason and Rowan, 1981) should be fully specified within the main objectives of the research, its methods of data collection and data analysis, as it needs to demonstrate that it is acceptable, useful and relevant and will increase the knowledge base.

In order to take into account, what Smith (1994) named a ‘methodological correctness’, the question of sampling also needs to be addressed, in terms of its representativeness (Kvale, 1995; cited in Willig, 2008) and the sampling techniques utilised, which inevitably brings limitations and a variety of possible interpretations of its impact to the results.
Issues of demographics, gender, context and language are of paramount importance. The way in which a sample is designed will depend on the goals of the researcher (is it to maximise theoretical understanding or obtain a representative sample to make inferences about a whole population).

Issues of validity and reliability are crucially important. Validity refers to a researcher’s confidence that given findings demonstrate what they purport to show and poses some important questions (is a researcher measuring ‘the right thing’, are the hypothesis specific enough and clear, are there any problems with demand characteristics, etc.)

Reliability refers to the accuracy of the measure and its consistency and poses a different set of questions (is it easy to replicate a research again, are results meaningful, etc.) To add to this, the issue of generalisability is equally important, in terms of the results being generalised to other conditions, other people, places and other times.

**Reflexivity**

It needs to be stressed that a refinement of the research design is a complex process where personal and epistemological reflexivity (Gergen and Gergen, 1991; cited in Richardson, 1996) plays a key role (how to appropriately define the research questions and relate them to research hypotheses and the theoretical background, which involves a conceptual understanding of research methodologies.) Personal reflexivity taps into a researcher’s individual beliefs, values and experiences, while epistemological reflexivity relates to the matters of an appropriate definition of the research questions and their influence on the findings.

This incorporates an awareness of the problems of methodological uncertainty, in terms of the existence of own blind spots (assumptions and prejudices) that could interfere with accurate creation and interpretations of the data. In this respect, sampling and methodological problems can occur especially with qualitative data, being contextually based and dependent on researcher’s active engagement on its interpretation. This process is inevitably subjective due to a “flexible, open-ended data” (Haslam et al., 2003, Bannister et al., 1998). This corresponds with Plato’s belief that our senses are empirical knowledge and therefore they are opinions, and opinions are subjective (they can also be wrong). This process could also be influenced by a researcher’s value system.


**Ethical issues**

Kant contributed a great deal to the field of moral and philosophical ethics. He developed the Categorical Imperatives as a way for people to make moral decisions.

He once stated, “To act morally is to perform one’s duty, and one’s duty is to obey the innate moral laws.” His second Categorical Imperative states, ‘treat humans as ends in themselves’. Kant felt that people should always be treated as ends in themselves and never a means to an end.

Therefore, the questions of an ethical behaviour (‘the ability to sense, judge and act in an ethically committed fashion’, (Brikmann and Kvale, 2008; cited in Willig, 2008) within the research and an appropriate access to the participants could not be neglected. All researchers have responsibility towards the participants and they need to fully explain the research purpose and its benefits, as well as the participants’ rights and how their well-being would be protected. All participants need to give an informed consent to disclose personal and potentially sensitive information (privacy) and a full confidentiality should be assured at all times. The participants have the right to withdraw at any time; they should be part of debriefing sessions and dealt with in an honest manner throughout the research process.

In terms of data analysis, certain restriction of meanings, or influencing certain conclusions, could be regarded as unethical, in the light of participants being unable to influence interpretations which are not neutral in ethical, political or personal manner. Also, an awareness of the power relationship where researcher might be seen as an expert (Holloway, 1989) should not be neglected.

**Summary**

In summary, I trust that an elaborate framework of the fundamental nature of a researcher’s paradigm with detailed explanation of its epistemological, ontological, axiological and methodological features was provided. Also, different versions of paradigms were outlined and their influence on the research design.

An outcome of the methodological debate was an emergence of pragmatism as a ‘leading’ or the ‘most workable’ approach in terms of combining both types of methodology. I fully agree with Tashakkori and Teddlie (1998) that it is possible to ‘work’ on philosophical and methodological ‘bridges’ between the quantitative and qualitative research traditions. These
authors emphasised the importance of the research question which should determine the most appropriate methodology and agree that the paradigm of pragmatism allows utilisation of mixed methodology and proposes an integrated methodology approach for the social sciences in general (Morgan, 2007).

Richardson (1996: 174) further suggests a need to accept a ‘methodologically aware eclecticism in which the full range of options is kept in mind, in terms of both methods and philosophical assumptions’. This means ‘incorporating a diversity of perspectives, voices, values and stances’ and mixing convergence and consonance with divergence, dissonance and difference (Greene, 2006).

However, any research will inevitably remain only as “the researcher’s version of reality” (Bannister et al., 1998), but this reality needs to incorporate knowledge about the research area, knowledge about the knowledge, as well as knowledge about a researcher and his personal journey.

In conclusion, the same quote from the Preface will be used: ‘The act of questioning presupposes the possession of knowledge or belief: in questioning the questioner discloses not only the ignorance which his question expresses but also the knowledge or belief which allows him to diagnose his own ignorance and to formulate his question’ (Melling, 1987).

Knowledge is created as part of a social process and could neither remain as specific or universal. This could be explained with the concept of transferability of learning from one context into another (Lincoln and Guba, 1985; cited in Tashakkori & Teddlie, 1998) i.e. usability of the existing knowledge under new conditions (Morgan, 2007).

It appears that any research might represent a ‘perpetum mobile’ - the never ending search for answers to numerous questions posed and seemingly answered by a researcher. (Rowland, 2006:111) emphasized the importance of discovering our own ignorance in order to provide intellectual space for new knowledge - ‘the subject always remains open to further interpretation, further questioning and new ways of knowing.’ So, the question: What counts as truth, belief, evidence and knowledge still remains unanswered…
References:

KRITIČKA OCENA RAZLIČITIH ISTRAŽIVANJA PARADIGMI

Critical evoluation of different research paradigms

(Morgan, 2007). Čini se da svako istraživanje može da se predstavi kao perpetum mobile – stalna potraga za odgovorima na mnogobrojna pitanja koja postavlja istraživač i na koja samo naizgled odgovara. (Rowland, 2006:111) ističe važnost spoznaje sopstvenog neznanja kako bi se obezbedio intelektualni prostor za novo znanje - „tema uvek ostaje otvorena za dalju interpretaciju, dodatno istraživanje i nove vrste saznanja”. S tim u vezi, na pitanje šta se smatra istinom, verovanjem, dokazom ili znanjem još uvek ne postoji odgovor.

Ključne reči: epistemologija, ontologija, aksiologija, metodologija, pragmatizam