Mixed Method Research and Brain Studies: Insights from Epistemology Based on the Argument of Social World versus Natural World. Why not One World?

Ahmed Alduais

Institute of International and Comparative Education Faculty of Education, Beijing Normal University, P.R.China

Corresponding author: Ahmed Alduais

✉ ibnalduais@gmail.com

Institute of International and Comparative Education Faculty of Education, Beijing Normal University, P.R.China.

Tel: +86 132 600 80 166

Introduction

Lara is 25 years old and she manifests stuttering. Her case is presumably presented to a neurologist, psychologist and linguist. The neurologist represents the objectivism, the psychologist represents subjectivism and the experimental and clinical linguist represents constructionism. They are all seeking for knowledge with different beliefs for each one of them. The truth that each one is going to reach must have acceptable, efficient and effective justifications. Through this scenario, I intend to present the argument of the social and natural worlds—furthering the view that the two worlds exist together with different methods to uncover them!

Short Communication

Basically, research is a method of systematising knowledge and making it more useful, productive yet effective. This systematisation of knowledge requires [regulations] and [laws]. Among (these) in my opinion is the distinction between social and natural worlds. We do really need to know that exploring social matters is entirely different from exploring natural matters. The nature of each world is a basic reason for assuming the existence of two different worlds regardless of the type of connection and/or interconnection between them. Before we start with the Lara's scenario, I shall present a short account of some epistemological views [1].

To start with Crotty, he attempted the distinction between different terms i.e. positive *vs* natural worlds. He detailed the difference between positive (science, law, and religion) *vs.* natural (science, law and religion) with the former referring to 'posited' knowledge and the latter as the nature-based knowledge. Having this in mind, Crotty proposes 'our knowledge of the natural world is as socially constructed as our knowledge of the social world'. It is clear that Crotty supports the views of Blaikie assuming 'people develop meanings together and it is already interpreted before the scientist arrives'. This leads Crotty to suggest 'we are born,

each of us, into an already interpreted world and it is at once, natural and social' (ibid). Crotty believes that the gap between the social world and natural world could be overcome through the proposed idea of positivism i.e. a philosophical school attempting to apply the rules and regulations of pure/natural sciences into that of the social sciences.

Moreover and according to Weber, the distinction between the social world and natural world is manageable [2]. It is stated 'our interest in the social world tends to focus on exactly those aspects that are unique, individual and qualitative, whereas our interest in the natural world focuses on more abstract phenomena, that is, those exhibiting quantifiable, empirical regularities'. This explanation is summarised in terms of 'nomothetic' versus 'ideographic' with the former referring to the natural world and the latter representing the social world (ibid) [3,4].

Besides, Giddens states that separation of the social world and the natural world is not absolute. Put differently, in one way or another, there must be some links between them. He declares 'the concepts and findings of the natural sciences do not remain separate from the social world, or from interventions, conceptual and technological, which human beings make into the world of nature'. The above views are supported with the view of Schutz who claims that accepting the view that the social world exists is the first step to examine the social world and explore its mysteries [5].

In spite of the many agreements of having two worlds: one is social and another is natural, but the definition of such differences seems to be totally arguable. The distinction between the social world and the natural world is norm-based for some researchers. According to Durkheim [5] 'the social world is differentiated from the world of nature essentially because of its moral ('normative') character'.

Different from this view and for both phenomenological and linguistic philosophers, they agree to the view that there are two worlds: one is social and the other is natural. These two worlds, according to them, are undoubtedly different from one another. For instance, the linguistic philosophers assume 'there exists a logical disparity between the social world and the world of nature **(Figure 1)** [5].

Blaikie argues against the views of Giddens stating that the social world is a world that is basically separated from the natural world. In other words, the existence of the social world is not necessarily related to the existence of the natural world. It is not a matter of pre and/post existence [2].

In addition to what have been mentioned above and for some researchers, there is an attempt to narrow the gap between the two worlds. According to Di Bernardo 'the social world displays the same order as the natural world: it is objective, and the task of the social sciences is to discover its invariant laws' [6,7].

In Williams the social world is clearly different from the natural world where he states 'social research is the means by which social scientists understand, explain and predict the social world'. This view becomes clearer when he declares 'we are then curious citizens who are interested in and care about the social world in which we live' **(Table 1)**.

Additionally, two assumptions are presented for the social world and the natural world where the first assumes the existence of the latter before the former– with the view that the social world has been influenced by the natural world. The second assumption is that the two worlds are separated from one another and the existence of the natural world before the existence of the social world doesn't necessarily affect the emergence of the social world [8,9]. The following figure illustrates these two assumptions. Wing table is a summary of the main differences between the social world and natural world according to Williams **(Figure 2)**. With reference to Berger and Luckmann, what makes the world social is the examined target– reality– 'is socially constructed' (Introduction, para 1). The identification of the objectives of the scientific world by the Vienna circle might be theoretically an evidence for the existence and need to differentiate between what we refer to as the 'social world' and the 'natural world'. This is clear when referring to the scientific world as '...empiricist and positivist: there is knowledge only from experience, which rests on what is immediately given... marked by application of a certain method, namely logical analysis' [6].

Moreover, in Denzin and Lincoln (2005), the social world is distinguished from the natural world methodologically in association to the difference between the qualitative research
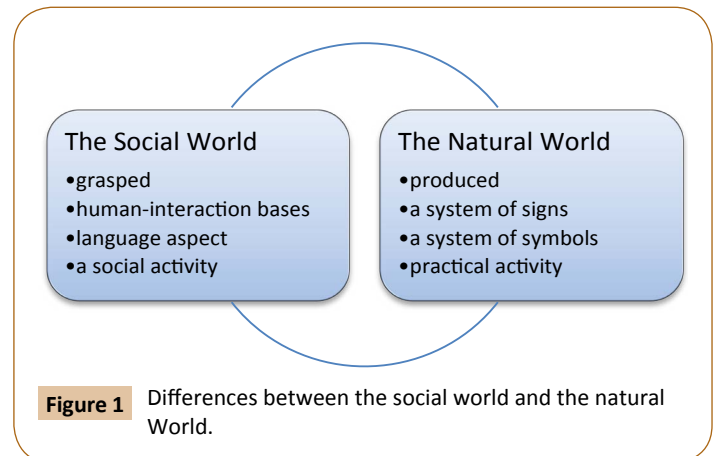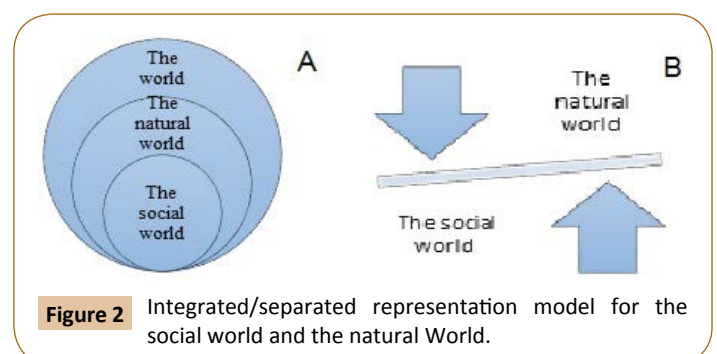
Figure 1 Differences between the social world and the natural World.

Table 1 A comparison between the social world and the natural world.

The social world	The natural world
Investigates the activities, beliefs, values and situations of other human beings	Investigates the natural world as it appears
Findings are subject to human redefinition or opinion	Findings are subject to applicability
Findings are socially constructed and subject to redefinition	Findings are scientifically constructed and are not subject to redefinition
Contentiousness feature	Stability feature
Much more qualitative in research	Much more quantitative
Subjective with aim to be objectivised	Basically objective
Things are not so clear-cut	Things are either clear-cut or not
Positivism	Objectivism
Cause-effect subjectively established	Cause-effect objectively established
interactions between individuals and the social world are continually changing each other	Interaction between individuals and the natural world are stable
Indirect cause-effect relationship	Direct cause-effect relationship

Figure 2 Integrated/separated representation model for the social world and the natural World.

and the quantitative research. This could be illustrated in the following **(Figure 3)**.

One more distinction between the two worlds is that mentioned in [7] where the world consists of: events, objects and structures that can be differentiated in terms of the social world and the natural world through the different methods– being used in both sciences according to the nature and purpose of each science i.e. the social sciences and the natural sciences.

Figure 3 Two Worlds and two research methods model.
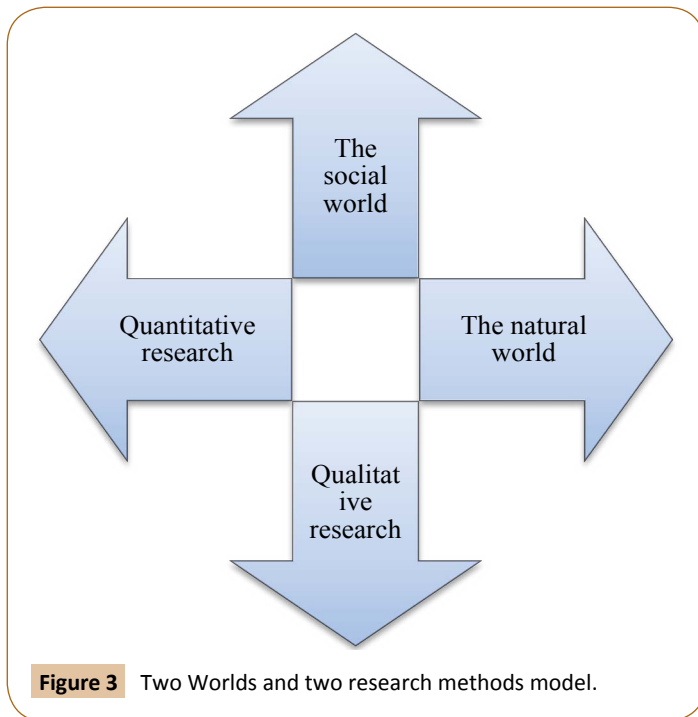
To conclude, the above arguments support—in one way or another—the view that what makes the world 'social' is the interaction, engagement and direct interference of the man in the reachable findings and outcomes about a certain explored event. On the other hand, what makes a world 'natural' is the objective exploration and indirect interference yet influence to reach plausible findings and outcomes that are stable and will hardly have the chance for different and/or various conclusions. As far as I am concerned, it is the fact that we try to contextualise our surroundings which make us call it a 'social' world and it is the fact that we try to control the context and make it usually a [long-life] system, regulation, law etc. which make us call it and recognise it as a 'natural' world.

A proposed evidence of two worlds: Lara's Scenario!

Actually, studying another person's life could be approached differently depending on the researcher's epistemological, theoretical perspectives, methodological and technical (i.e. methods) preferences. As a researcher, I can be fully a positivist, fully an interpretivist and fully a realist depending on the approached area of knowledge and the objectives of my research.

Given this, scholars have different views on how knowledge should be best approached, but [they] in one way or another agree to the fact that epistemology is the study of knowledge in relation to three basic concepts: belief, truth and justification. Granted that the ultimate purpose of any investigation is knowledge in terms of belief, truth and justifications, the main argument remains how this investigation should be carried out! Consequently, three major types of epistemology emerged (i.e. objectivism, subjectivism and constructionism) resulting into various theoretical perspectives, methodologies and yet methods for investigating knowledge.

Now, let's assume that the person whom I am studying her life is Lara. Basically, Lara is a 25 years old and she is manifesting stuttering– a speech disorder. We will also assume that there are three versions of me (i.e. Ahmed the positivist, the interpretivist, and realist). At the same time, we will assume that each version of Ahmed is doing a different job: a neurologist, a psychologist and a linguist. The order of the three different versions of Ahmed as a researcher and the three jobs are not necessarily matched to one another (e.g. positivist as equal to neurologist, etc.). Believing that the overt behaviour and the object– a person manifesting a speech disorder– is the available truth which could possibly lead me to justify my findings about Lara, I would not necessarily dive into the covert behaviour and the subject– the social and psychological factors causing the disorder. The result of the imaging machine (e.g. fMRI) for Lara's brain, would definitely allow me to reach an acceptable conclusion whether a neural impairment exists or not– concluding that the reason is neurological or suggesting that the reason is something else.

Having that done, Ahmed, the psychologist believes that approaching Lara's case should go differently. He thinks that the overt behaviour should be in one way or another related to the unique features of Lara as a human– subject– other than an object manifesting a speech disorder. Lara's life is better to be approached in relation to her other aspects of life and to her social environment. There must be a biography of Lara, a narrative about her and these should relate intricately to her life as Lara and as Lara who is manifesting a speech disorder. The analysis of these data would result into presenting suggestive findings about Lara that could be examined further.

For Ahmed, the linguist, studying Lara's life in relation to her speech disorder should take threefold approach. In order to reach a better conclusions regardless of whether they are conclusive or suggestive, he thinks that considering Lara as both an object and as a subject should go together. For him, the truth is hidden between Lara as a subject and Lara as an object and this truth must be properly constructed. Ahmed's main concern as a linguist is to help Lara overcome as much speech difficulties as possible through diagnosis, assessment and rehabilitation programmes. The first step would be to minimise the possibilities of solutions, that is, the possibility of medical intervention could be abolished after making sure that there is no brain impairment in Lara's brain (i.e. developmental dysphasia). This would increase the reliability and validity of the suggested rehabilitation programme. The second step would be also medical verifying that Lara is not manifesting any problem in the speech organs (ENT: Otorhinolaryngology). This would again increase the verifiability rate for Ahmed to go on with his investigation for Lara's life. Having done so, the next step would be to verify and go through Lara's profile made by Ahmed the psychologist. This would tell Ahmed about the psychological and social status of Lara as a human-subject– other than Lara as a human– object. Assuming that it was verified that there isn't any neurological deficit in Lara's brain and that the cause of stuttering is a psychological one (e.g. a social negative experience/event), the rehabilitation programme is ineffective unless is proceeded with a proper treatment for the psychological disorder.

Granted that the three versions of Ahmed are seeking for knowledge: belief truth, and justification, there must be different levels for the verifiability, reliability, validity and practicality of the findings of each Ahmed (the neurologist, the psychologist and the linguist). While the neurologist believes that the fMRI result is the most authentic way to draw a conclusion if the reason of Lara's speech disorder is neurological, the psychologist believes that life history of the person is the way to decide on this. Similarly, while the reached truth of the neurologist is verified by the fact that pure sciences are often definite, the value of this finding would be that it suggests and concludes that Lara's neurological system is intact. On the other hand, the reached truth by the psychologist suggests that these interpretations totally or partially might be the reason for Lara's problem– these interpretations need to be examined further, therefore. As for the linguist, since he believes that minimising the probabilities causing Lara's to stutter is the ideal step to reach the truth, then the value of his findings depending on the effectiveness of the rehabilitation programme and making sure that the medical, psychological and social factors have been achieved– resulting into valuing the findings as negative or positive ones.

To this end, epistemology at all senses seems to be a matter of appropriateness and depends on the researcher's research capacity, awareness, and skills to decide on what suits what and what achieves what. I don't really mind being fully a positivist in a particular context, fully interpretivist in a certain context, fully realist in a compound context, or even being necessarily all of them in a complex context.

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