



Research Paper

Digitization in the Social Sciences: Theory and Methodology

Mahdi Akbari Golzar¹

¹(PHD candidate, social science faculty, University of Tehran)

ABSTRACT: Today, the modern world is facing a crisis of meaning. This is also reflected in the social sciences, but in a different way. The pace of change is so high that theories have lost the ability to update with these changes and therefore become obsolete one after another. The advent and extension of technology is considered to be one of the main reasons for accelerating these Transformations. This article claims that the development of technology changes the type of human ontological and epistemological encounter with the world around him and generally affects human social relations. For this reason, the social sciences, in view of these Transformations, must reconsider both their theories and their methodology and align themselves with them. Otherwise it loses its efficiency and becomes obsolete.

KEYWORDS: Social Science, Crisis of Meaning, Advent of Technology, Theory and Methodology

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I. INTRODUCTION

The world is now in a crisis of meaning after going through many ups and downs from the Renaissance and the Enlightenment to the years after World War II. This crisis of meaning, following ontological and epistemological deadlocks as well as economic recessions in the West, has led to the emptiness and aimlessness of human life. Fundamental questions like what is the meaning of life? Where does this process end? What should be done in the economy space of the world? What should be done in the social space of the world according to this situation? And questions like these have arisen over and over again.

Thus, everyone somehow seeks to produce or reproduce meaning in the world. In the meantime, the social sciences, which have a historical character in this field, are of great importance. In the social sciences, conceptualization is necessary for theorizing in order to gain a scientific understanding of social realities through the formulation of problems.

However, the epistemological system of the world is constantly changing, and as a result, actions and structures are also changing. It is in this situation that theories lag behind the pace of evolution and lose their explanatory power. In the digital age, where the pace of change and social change is extremely high, this problem is more visible. Social relations change rapidly and theories cannot update themselves so quickly; As a result, they are left and unused. On the other hand, as Buruno Latour [10] argues, one of the tasks of social theories has been to make the world meaningful to us. When these theories lose their efficiency, in fact, we face a crisis of meaning and it becomes difficult for us to understand the social world around us. And what could be more terrifying than the crisis of meaning for man?

Now the main question is, given this crisis of meaning throughout the capitalist world, where can we get this meaning? Or how can we shape it? A variety of topics can be influential in this regard. Among them, changing our view of the world from subject-object to subject-subject, as the neo-Kantians put it, can be effective. In this process, meaning is constantly being reproduced due to its role in all natural, geographical and historical elements and is continuously formed in fluidity. For this reason, there is a need for a deep and interpretive view of the world. Or another case is the confrontation between romanticism and realism. While realism deals with intelligence and rationality and ultimately with concept, romanticism deals with memory, which ultimately leads to the creation of meaning.

But another important and influential issue in today's world is the impact of technology and cyberspace on the creation of meaning and subsequent cultural change in the human world. Technology is one of the most important cultural elements today that is rapidly changing cultures, and We have no escape from it. We will continue to discuss technology and its role in changing human ontological and epistemological encounters with the world around him.

II. ADVENT OF TECHNOLOGY

Technology can be considered as an external representation of art. In this way, human instincts create needs and human beings create technology for these needs. Ultimately, the creation and application of technology creates its own lifestyle. But the key question is how does technology change the type of our worldview? In other words, how does technology create an ontological and epistemological turn in the digital age that affects all human and even inhuman aspects to such an extent? With this ontological and epistemological turn, naturally, the type of methodological encounter in research has also changed profoundly. Aside from subject-object or subject-subject encounters, technology seems to have created a situation that goes beyond all of these issues, which we'll cover in more detail below.

Technologies have always had an impact on human capacity. Therefore, we can not easily separate technological issues from human issues. Computers and digital machines have changed the way people act and interact in the world from the beginning. In the history of war, we have gone from a face-to-face battle to killing at long distances through computer technologies that enable smart bombs, killer robots, drone assassinations, and preventive warfare. These technologies not only take war farther away in space and time, but also remove it morally. The example of digital warfare shows us that digital machines change the way objects and objects relate to each other and shape them.

According to Ritzer [14] in the present age, the role of digital media, especially Internet 0.2, which has provided the interactive basis of cyberspace, in consumption is undeniable. For this reason, he believes, these media have ushered us into a new era, which he calls the "digital age".

Internet 0.2 has a very high interactive potential compared to Internet 0.1. On the Internet 0.1 content is offered one-way and users can not play any role in its modification. But on the Internet 0.2 it is the users who produce the content and the content of the sites they consume themselves. In this way, these users become the free labor force of broadband sites whose life depends on the activity of its users.

Ritzer, with his own conceptualization of the relationship between capitalism and consumption and digital media, offers a new formulation that, while not yet very familiar to everyone, but is pioneering. By redefining the concepts of production and consumption, which he believes were the main features of previous periods of capitalism, he proposes the combined concept of "prosumption" [13]

These are the basic concepts on which Ritzer seeks to prove that we are witnessing a new form of capitalism in the present age, which he refers to as "prosumer capitalism" [14]. This new capitalist system is based on digital media and transformed concepts of consumption and production and surplus value, not like classical thinkers such as Marx or Baudrillard, who are known as the two poles of productive capitalism and consumer capitalism.

The result of the advent of the Internet 0.2 and the expansion of cyberspace is the emergence of big data that covers all aspects of users' lives. Today, big data provides you with all the information you need from Internet users. Big Data By analyzing algorithms derived from the actions of users on the Internet 0.2 can accurately predict even the sexual taste of users.

In media and communication studies, big data is used to create a new understanding of political, economic, and everyday life through communication on Twitter, Facebook, and other social media. Big data has changed actors, structures, systems, content, effects, contexts, and power structures of human communication.

A related scientific conference on this topic continues in 2017 at Westminster University in London, where two categories of papers will be submitted to this conference. In the first category, an optimistic view of big data is presented, which believes that big data, like other communication technologies, makes human life easier and more prosperous. But in the second category, which is pessimistic, there is a belief that big data negatively affects human life.

The fundamental question about the digital age is what level of capitalism and society should we expose to digital transformation. As Chandler and Fuchs [3] we can talk about four main positions. The first view holds that digital is revolutionizing society, so that we no longer live in a capitalist or modern society, but in a whole new kind of society. For Manuel Castells [1][2], for example, the emergence of a networked society means the formation of a new world. Castells also argues that the information technology revolution instilled the emergence of information orientation as the material foundation of a new society.

The second view argues more critically that the discourse of the information society is a neoliberal ideology that introduces information technology as the constituent of a whole new society, one that promotes technological optimism and technological determinism. This pessimistic line of thought, while acknowledging that society has undergone profound change, questions the assumption that we live in a completely new society. However, there is variation in this approach.

The third approach is that digital capitalism is the dominant dimension or type of contemporary capitalism. This approach follows the assumption in methods that speak of cognitive capitalism. Cognitive capitalist theory has been developed specifically by independent Marxist approaches. Jan Molière Butang [11] argues that cognitive capitalism is based on the accumulation of intangible capital, knowledge dissemination,

and the stimulus role of the knowledge-based economy. We can distinguish three main structures in the history of capitalism: First, commercial capitalism, which was based on the superiority of the mechanisms of capital accumulation and trade and developed between the beginning of the sixteenth century and the end of the seventeenth century. Then came industrial capitalism, which was standardized based on the accumulation of physical capital and the motivating role of large Manchester-style factories in the mass production of goods. Then cognitive capitalism was introduced as the third type of capitalism.

David Harvey [6] represents the fourth perspective on the question of what level of capitalism and the digital transformation of society should take place. He has described contemporary capitalism as a flexible accumulation regime [9], neo-imperialism [8] and a form of neoliberal capitalism [7] based on accumulation processes associated with expropriation and financing. These constitute the potential for a real crisis because real accumulation deviates from hypothetical capital accumulation. Digital technologies play a mediating role in this overall transformation of capitalism for Harvey. They are time-space compression tools. For Harvey, these changed conditions of capitalism require the development of digital technologies: the production of space examines how new land use systems, transportation and communications, land organization, and etc are produced, and how new ways of representation (such as information technology, programming, Computer design). What was originally seen as a liberal system in the co-production of open access societies has become an extremist exploitative regime from which capital feeds freely. Unconditional looting by big capital (such as Amazon and Google) of free goods produced by skilled labor has become a major feature of our time.

In this regard, Ritzer [14] goes on to argue that capitalism has historically sought to lower labor wages in order to increase capitalist profits; Now, with the growth of technology and the activity of prosumers in the Internet 0.2 platform, they have become free labor for capitalist business, and what could be better than this!? prosumers are those who both produce and consume at the same time; This means that they both produce content themselves and consume content produced by others. Ritzer distinguishes between this form of digital workforce and the traditional workforce that works in the factory [4][5]. He believes that although traditional labor was exploited, today's prosumers are exploited more than them, with the difference that prosumers themselves do not realize this exploitation. Cyberspace prosumers think that they use the free services of these networks such as Facebook, Instagram, Twitter, etc., but unaware that the information and the time they devote to producing content on these sites, directly contributes to the profitability of the owners of these networks. It increases their capital day by day. Ritzer points out that prosumers are not only dissatisfied with the exploitation, but also enjoy it and are willing to spend long hours without receiving any receipts. On Facebook, for example, the variety of capabilities lies in the fact that one can choose exactly how to introduce oneself, and one can also change it at will. In addition, many see Facebook as an effective social tool for building and maintaining relationships with others. In addition to common achievements and empowerments, individuals can earn a purely material income by being a prosumer.

Big data and their algorithmic power can lead to the world becoming a huge shopping center where people are targeted by advertising almost everywhere and the business logic of society is captured. In the big data world, algorithms that use rationality as a tool to calculate human needs can automate human activities and decision making to meet those needs. The problem is that algorithms and machines do not have ethical principles. The commodification of data means the emergence of new social inequalities and intensifies the exploitative tendencies of the Internet.

In the meantime, the issue of the production of surplus value also changes, as Marx envisioned it. Marx believed that the collective nature of the labor force needed to expand the concept of productive labor. It is not only unpaid labor-related wage labor time that is exploited, but non-wage labor that contributes to the production of goods and the accumulation of capital. Exactly as we see in digital media. But the digital workforce on commercial social media differs in some respects from the audience work on commercial broadcast media. Social media uses targeted advertising based on a big data product. Audiences create meanings through content. Social media users also create social relationships, content and data. The digital workforce of user on social media is based on presumption, continuous monitoring of personal data, targeted and personalized advertising, forecasting algorithms and algorithmic auctions. Facebook and Google are the largest advertising agencies in the world that use this workforce and capture the big data data of the audience.

Marx described the process of increasing the capitalist's profit by exploiting the working hours of the worker; Thus he believed that the wages which the capitalist gives to the worker are in fact in exchange for the value of his six working hours, while the working hours of the worker are 12 hours in day, and the capitalist work out 12 hours in day from him. In fact, the 6 hours for which the capitalist does not pay the worker's wages become the surplus value of the goods produced for the capitalist. We now know how intangible and complex this exploitation and the process of surplus value formation has become more than one hundred and fifty years after Marx raised these issues and passed through the industrial, service, and consumer ages to the digital age. It is no longer the worker who creates surplus value, but the free time of digital media users who add value by spending seemingly empty, unprofitable time and watching advertisements and influencer activity. A process that seems very complicated and strange, but it is constantly happening.

Exploitation on the Internet 0.2 is more ambiguous. On the one hand, the capitalist themselves own the main sources of the Internet 0.2 (for example, Amazon, Wikipedia, Facebook) and prosumers are productive, but the profit or at least the profit potential still belongs to the investors who own these networks [15]. They provide prosumers with minimal production resources. Sometimes as much as it allows prosumers to use the resources needed to choose the color of their car, it also allows prosumers to enter Facebook settings to create Facebook profiles (with very little authority).

No one pays to read blogs or check Amazon. Many Google services (search, online maps, email, online office suite, even operating system) are available to users at no cost. The point is, most online services are free of charge. Obviously, this creates an interesting dilemma for companies that want to make a profit. The company that expects its users to produce content, in turn, often provides customers with the best possible access, as well as a low-priced or free product.

All of these cases indicate a fundamental change in the type of human encounter to its environment, nature, economic conditions and social and cultural context. Another theory that has addressed these fundamental epistemological changes is Bruno Latour's [10] actor network theory (ANT). The focus of this theory is not on the human factor in performing certain actions, but rather on the networks in which these factors and actions exist. This network is likely to include other human factors as well as a wide range of inhumane issues. In addition, actor network theory emphasizes the idea that both human and non-human components of the networks associated with them that trapped in it, are actor. But the ability of non-human actors to act is different from the human ability. Material artifacts, whether intentional or not, are actor (including smart machines); They do their job.

Latour formulated this theory in the first decade of the present century and it has become more and more important today with the increasing advancement of technology. From the perspective of act network theory (ANT), the rise of smart machines is adding a new set of actors to the network. Adding these smart machines not only adds more complexity to that network, but also profoundly changes it as human importance diminishes. In other words, it leads us more to the post-social and post-human world.

Many of these smart machines, which have greatly affected human life, interact with each other and will become more and more connected to what is called the "Internet of Things." The Internet of Things (IoT) is one of the most recent phenomena that is expected to transform human life once again. The connection of the Internet of Things with what Latour formulated more than fifteen years ago shows that if we consider objects, either directly online or indirectly, as actors, then the way we look at the world that actually The very world that makes up our phenomenon, what changes it will have [12].

Imagine that before you get home, your smart home system turns on the air conditioner and adjusts the temperature, and the gas is turned on automatically so that when you get home, the food is ready in time. The smart systems themselves schedule the watering of the houseplants and also send you a complete performance report if desired; However, these systems can be so accurate that you no longer need to report on their performance, or even consider these reports to be superfluous. To get to the cinema, get out of your car in front of the cinema door and your car will automatically go to the parking lot and park in a convenient place. Inform the car system one minute in advance so that as soon as the exit door is reached, the car in front of the door is ready. All this is by no means out of the question with the Internet of Things. Objects themselves act, and many everyday tasks are performed intelligently. In this case, many social and human interactions will be eliminated; That is why the discussion of the post-social and post-human world is so serious.

In the post-human world, it is no longer just human beings who are at the center of social interactions. Not only do smart objects and systems play an important role in interacting with humans, but, as noted, the relationships between objects also form a large part of social life as a whole.

It is in such circumstances that the prominent role of the social sciences in the reproduction and interpretation of meaning becomes clear. In the posthuman world, the role of the individual human being not only does not diminish, but also appears in more complex interpretive layers. These semantic changes lead to a change in culture; In other words, in general, in these circumstances, clarifying the position of culture requires a much deeper and more fundamental view. This profound insight can be traced to methodology and theory, which we discuss below.

III. METHODOLOGY AND THEORY IN THE DIGITAL AGE

The fundamental question that arises in the discussion of methodology in the digital age and with the advent of big data is that if big data gathers a vast archive of the most detailed private information in human life, then what need for research? What need to be collected when we have food, entertainment, sports, study, clothing, moral, and even sexual interests, as well as people's perceptions of political, cultural, sports, etc. events and their analysis of these matters? Is there data in the research field again? All that remains is the analysis of this massive data, which is done in the most accurate way with mathematical algorithms and a computer, and is presented as a model. What really remains to be done for research?

This epistemological turn can be considered a transformation to the greatness of the advent of the steam engine. Just as the steam engine, in spite of the practical changes it brought about in relation to labor and the increase in the rate of production and accumulation of capital, it also brought about a fundamental change in the view of men in the face of labor and labor and capital and their future in general. Big data, along with the practical changes they make in methodology, change the type of humans deal with research issue.

Shortly after the advent of steam engines and fully automatic devices, it became clear that, firstly, many of these devices needed a human operator to operate and control them, and secondly, many things could not be delegated to machines. So inevitably man must remain on the scene. Today, in the 21st century, despite the amazing advances in technology, the role of the human labor force is still colorful, and there is still a long way to go to fulfill the long-held human desire to replace inhumane technologies.

To return to the main discussion of methodology, it should be noted that the emergence of big data in research has led to new approaches such as computational social sciences and digital humanities. These are types of big data positivism. Such research raises a lot of capital and is fascinated by quantification.

The fact that the positivist social sciences from the very beginning aspired to a method that would achieve certainty and be able to make absolute judgments like the natural sciences is highlighted here, and the importance of the hermeneutic and interpretive role of the social sciences in field research is disclosed more than ever. It is clear that all computational social science approaches, using their exact algorithms, remain only at the level of statistical analysis of big data, and the discussion of data interpretation is severely neglected. Regardless of what social reality is or can be, the new social sciences emphasize that it is extremely important for different people to understand the perceptions of these realities in different contexts. How people interpret their narrative of events and how these interpretations shape their world is something that cannot be reached in any of the computational paradigms.

On the other hand, the validity of the data collected from digital media is also questionable. Today, the presence of people in cyberspace has become a scene of unrealistic display of middle-class people in any way. Cyberspace allows them to present an unrealistic image of themselves by arranging the situations in which they find themselves. For example, the middle class in cyberspace is very interested in looking for luxury products and luxury restaurants, and also takes every opportunity to show themselves as part of the upper classes by displaying luxury goods and expensive food. Or also by presenting cultural products and books, etc., to present educated figures in cyberspace. However, collecting this raw data may not provide an accurate picture of users.

IV. CONCLUSION

But if we want to take a comprehensive look at this issue, this discussion is only part of what we call big data. Much of the big data is formed by online transactions resulting from the purchase of products from online stores and booking of tickets and popular sites, etc., which forms a set of interests and tastes of the audience. However, the issue of interpretation remains.

Overall, although all available evidence suggests a fundamental epistemological shift in the world of human phenomena in the digital age, the need for an in-depth methodological approach to the study of human aspects has not yet disappeared. Although the media and digital space have led to the transformation and even shaping of human cultures, they have still failed to gain a deep understanding of a complex category such as culture.

On the other hand, it should not be overlooked that we in the social sciences still need research theories and methods that can update themselves with the current digital age and provide a comprehensive understanding of contemporary contemporary issues. Anyway, a science that can not adapt to the conditions of its day loses its efficiency and is involuntarily removed from the center of attention.

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