Analyzing the Connotation of Science from the View of Criticizing the Omnipotence of Science

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Abstract: This paper argues that before critiquing the theory, the first task is to thoroughly understand the connotation of science, and proposes the theory of science in a dynamic and static way, which examines the development of science as a system of knowledge and its delimitation in two aspects, while the static level focuses on the scientific spirit and scientific attitude to The static level focuses on understanding science in terms of scientific spirit and attitude. This is followed by a deeper understanding of science in terms of its role in society as a 'transforming agent' for social development and disagreement, thus providing a different perspective on scientific omnipotence and, by extension, on current social disagreements, from the perspective of science as a 'transforming agent'. 'transforming agent' perspective to provide new ways out of the current social disagreements, and in this way to play the benign social role of science.

1 Background and Introduction

In the early twentieth century, the abstract concept of science was introduced to China as a foreign product, and the collision of Eastern and Western cultures led to a noteworthy debate in the intellectual world, known as the science and mystery controversy, and scientific omnipotence became an endless topic of debate among philosophers at that time. It is no coincidence that in the 1960s, a wave of criticism of scientism emerged in the West, and scientific omnipotence again became the target of philosophers. But before critiquing scientific omnipotence, the first task was to clarify the content of science.

When it comes to science, it is a familiar and unfamiliar concept, familiar because it has always been throughout people's lives, whether it is the scientific concept of development, scientific socialism or natural science, social science, are closely related to science; and unfamiliar is reflected in the fact that there is always no recognized concept to perfectly define science, as a thousand readers have a thousand Hamlet; in my opinion to truly understand science, you can start from The following two dimensions, first, science as an object, take a dynamic perspective on science; second, because science is only a practical tool, a means of human cognitive search, is a kind of instrumental rationalism⁴, people themselves are the real subject, it may be useful to think about the role of science on people, and people and society is the same embryo, in other words. The "change" of social disagreement as the object of representation may provide a new understanding, and we will discuss the above two dimensions in detail.

2 Scientific Methodology: A Dynamic Look at Science

2.1 The "movement" of science

The 'moving' manifestations can be divided into two types: one is science as a knowledge evolving, and the other refers to the delimitation of science.

2.1.1. Science as a knowledge is evolving

In the definition of the Dictionary, science is an orderly system of knowledge based on testable explanations and predictions of the form and organization of objective things, knowledge that has been systematized and formulated ³. Based on this statement, scientific knowledge characterized by science as a noun form has the following developmental history: human beings first accumulated experiences related to the production of life through labor in the origin period. Later, as society developed, in the classical period, the creation of symbols such as numbers and the drawing of geometric figures, which, in the opinion of empiricists, were based on the deduction and induction of phenomena, formed the real knowledge, also known

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as science. Later, with the strong support of the Church, people continued to try to find evidence of the existence of God by observing the universe, but by mistake In the Age of Enlightenment, scientific pioneers such as Isaac Newton and Leibniz were born, who greatly improved the so-called physics, that is, injected new vitality into the system of knowledge; now in the modern era, the birth of the theory of relativity, which can be regarded as a pure knowledge that can be used to explain specific things or phenomena and can provide people with a way to understand the world, and the corresponding quantum mechanics, which can be regarded as a pure knowledge that can be used to explain the world. Quantum mechanics, the counterpart, marks the advent of an era of uncertainty that challenges classical science while questioning empiricists, and is another example of the continuous development of science.

However, the development of science does seem to be a process of accumulation of knowledge in empirical evidence, which is what logical positivists see as science, through the induction of empirical facts, which gives birth to scientific theories, and the growth of knowledge is the nature of science. But it is worthwhile to look at it dialectically. In his new book "The Structure of Scientific Revolutions", the famous philosopher of science Thomas Kuhn proposes a new view of science: science is essentially an enterprise based on community and driven by the inner mechanisms of community, and the inner and outer extensions of this community extend to constitute the scientific paradigm. In layman's terms, the scientific paradigm refers to the five elements of the scientific worldview, the scientific method, the archetypes of scientific results, the evaluation system of scientific work, and the organization of scientific institutions, all of which together constitute the image of science in a given historical period.

At the same time, the development of science is not gradual and cumulative, but rather a cycle of three stages, firstly, the conventional scientific stage of following a specific scientific paradigm to solve the mystery of science, when there is a stable scientific paradigm; secondly, the period of scientific crisis when there are a large number of counter-examples that cannot be solved by the existing paradigm, thus forcing scientists to use ad hoc assumptions to remedy the situation, when the inherent paradigm begins to fall apart; and finally, the period of scientific revolution when the period of scientific revolution when old paradigms fail to be rescued and new paradigms capable of solving critical problems are proposed and gradually replace the old ones. One of the most powerful scientific revolutions in history is the example of understanding the continuous development of science as a body of knowledge, which also coincides with this paradigm theory.

2.1.2. Delimitation of science

The movement of science is also manifested in the delimitation of science. In the view of many philosophers, the source of the emergence of science was philosophy, which only later gradually escaped the control of metaphysics with the continuous evolution of science. In the eyes of logical positivists, natural science starts with observable experience, through objective and neutral experiments, excluding the influence of human subjective factors, and therefore considers natural scientific knowledge to be strictly objective, logically operational, and empirically verifiable. Knowledge or propositions that do not satisfy these conditions cannot be called science.

It is worth mentioning the syntactic view of the philosophy of science presented by the positivist pioneer Carnap in Empiricism, Semantics and Ontology as an important way to delimit science. First of all a sentence is meaningful when and only when it is either reduplicative (its negation is self-contradictory) or it is in principle capable of being tested by empirical observation, while the so-called metaphysics is nothing but a number of meaningless sentences, and of the meaningful sentences the reduplicative part is controlled by logic and mathematics, while the rest is attributed to the natural sciences.

In the picture constructed by logical positivism, things are divided into observable and unobservable categories, and sentences about the former only are called observational sentences, while sentences about the latter only are called theoretical sentences. A scientific theory is a system of axiomatic forms consisting of several theoretical sentences and correspondence rules. Experience is the common basis of all sciences, and theories acquire their meaning through deductive relations with observation sentences. At the same time theory is at the heart of science, as a linguistic entity, theory is both the goal of scientific discovery and the object of scientific testing, it organizes our knowledge, tells us what is invisible in the world, and provides scientific explanations for phenomena, and ideal science implies ideal scientific theory, and ideal scientific theory implies the ultimate truth of everything in the world, and the logical positivists believe that this is the direction in which science is striving.

But viewed with a critical eye, the syntactic view encounters a number of challenges such as the existence of reflexivity problems in theories of meaning, the absence of absolute analytical synthesis distinctions, the inability of empirical observation to escape the influence of theory, and the difficulty of translating theoretical statements into empirical statements. In response, the philosopher Karl Popper pioneered the use of falsificationism to explain the demarcation of science. In his view, the core of logical positivist theory is the principle of empirical confirmation, but induction does not exhaust all sciences, and so the doctrine of falsificationism, in which the principle of falsification and the criterion of demarcation are unified, is proposed. In layman's terms, if a theory makes a prediction about the future, and the prediction comes true, the theory is confirmed, and if the prediction fails, the theory is falsified, and if the empirical phenomenon that
can be falsified is logically possible, then the theory is falsifiable. And what makes a scientific theory a scientific theory is that it can in principle be falsified by empirical observation. A pseudoscientific theory is a theory that cannot be falsified by any empirical observation, such as the religions of idealist, which ostensibly explain all phenomena in the world with ambiguous theories that provide no scientific knowledge.

At the same time, in Popper’s eyes, confirmationism is less reliable than falsificationism, because in hypothetical reasoning, if the conclusion is false, the premises must be true, and if the conclusion is true, the premises are not necessarily true, while the mere use of a counterexample to arrive at a result is undoubtedly an exciting adventure, but it also truly reflects the value of science. The famous physicist Stephen Hawking, also a supporter of falsificationism, wrote in his popular science masterpiece A Brief History of Time: "Any physical theory is always provisional: you can never prove it, and no matter how many times an experiment turns out to be consistent with a theory, you can never conclude that the next result will not contradict it. On the other hand, you can falsify a theory even when you find an observational fact that differs from its language."[2]

In short, the core of all the theories used to delimit science is the complete exclusion of non-science, and the analysis of this dynamic process deepens the understanding of the connotation of science and is an indispensable process for the critique of scientific omnipotence.

2.2 The "stillness" of science

The ‘stillness’ of science, in my opinion, can also be divided into two main expressions, one is the attitude of science, and the other is the spirit of science.

2.2.1. Scientific attitude

First of all, the scientific attitude is an epistemological attitude, as Kant argues in the Critique of Pure Reason: phenomena are the origin of all knowledge, and thus the subjects served by the scientific attitude are those phenomena that both conceal and reveal the essence of the essence.

People are curious about these phenomena at the very beginning of their lives, and they keep asking new questions about them and actively exploring the answers hidden in the depths of the phenomena, which is part of the scientific attitude. And this curiosity does not change with the times, it has become a deep-rooted attribute with the birth of consciousness. Other scientific attitudes, such as thinking critically, i.e., weighing the two sides of things, respecting empirical evidence, actively seeking more arguments, being flexible, actively changing old ideas and not letting them become the prison of one’s own mind, etc., have always followed the course of mankind, inspiring pioneers to open up new epochs, and being the reason why we have been able to go all the way from the wilderness to modern civilization. It is also the reason why we have come all the way from the wilderness to modern civilization.

2.2.2. Scientific spirit

Secondly, the scientific spirit can be seen as an ontological attitude, confronting the beginning and the whole of the world, and it treats science as an ideology, as a psychological tendency and concept of a belief system, which in Marx’s eyes becomes a scientific worldview, an accumulation of ideas about the nature of the world.

In layman’s terms, the spirit of science is the most noble beliefs that have been accumulated through the historical legacy of early mankind and continuous exploration, such as truthfulness, innovation, perseverance, tolerance and self-discipline, all of which are spiritual qualities naturally formed by mankind when exploring the unknown, and are indelible and indelible marks in the hearts of great explorers, and are also the embodiment of the stillness of science.

3 Conclusion

From the perspective of movement and static science, each has its own characteristics, but there is also a clear commonality, science is always in a position of subordination to human beings and exists, is accompanied by human thinking activities and behavior paradigm is born, but also in the constant reaction to human beings themselves, on human social development has an incomparable far-reaching impact, and from the perspective of social divergence, science acts as an important entry point for a deeper understanding of science and a harmonious coexistence with it.

The next part of the paper is illustrated with the example of Chinese society.

4 Significance for Nowadays

First of all, human beings evolved from the forest apes, and after they understood the meaning of labor and mastered the ability to make tools in the Stone Age, people began to hunt and share the fruits of their labor, and the prototype of primitive tribes began to appear, at this time, the biggest conflict within the group is the division of labor and the fair and reasonable distribution, and the biggest conflict outside the group is the competition for territory, but on the whole, the external conflict is far greater than the internal conflict. But overall, the external conflicts are far greater than the internal conflicts, because the external killing can achieve far greater harvest than hunting and the lack of civilized thought regulation, in the era of the strongest, the natural law of survival of the fittest is their faith, how to survive is also the most important issue they should consider.

Until the advent of the farming era, various new plowing tools were produced, people's observation and understanding of nature deepened, they knew how to
observe and summarize climate phenomena and make logical reasoning about future weather changes, in such a process, a new system of knowledge was created, that is, science as the driving force behind the scenes, productivity increased significantly, the private economy also arose, people gradually tend to settle life, as more materials were produced than consumed, materials were gradually accumulated, and people no longer tended to plunder savagely but formed larger villages with a clearer division of labor, because in order to defend against threats from the outside, people tended to make adequate preparations, thus the cost of a plunder was greatly increased, and plunder was often no longer a wise choice, thus the differences from the outside were gradually degraded. This inequity will accumulate over time until the pattern is broken by intra-tribal uprisings or interventions from external forces, which naturally becomes the main aspect of social disagreement.

And with the emergence of slavery, the unpayed exploitation of slaves by slave owners, slaves lost their personal freedom, and the contradiction between the two is also an important part of the social divide, and the root cause of private ownership and slavery are closely related to the rapid growth of productivity brought about by science, so the social divide under the subtle influence of science quietly changed.

Then came the feudal period, the widespread use of bronze and iron, so that a large number of weapons for military purposes were manufactured, but also to promote the rapid increase in social productivity, and people's division of labor more clearly, and gradually promote the evolution of scattered tribes gathered into a unified country, and the construction of various buildings, weapons manufacturing norms, people's street planning, the same inseparable from scientific knowledge and At this time, the king was in an unshakable ruling position, and the antagonism between classes was very obvious, most of the families in the lower class could only be farmers for generations, except for a few rare talents who participated in the imperial examinations and martial arts examinations and jumped up, while the royal noblemen's children were able to enjoy the best services without having to work their bones, so the class became a gap that could not be crossed, and also became the source of social disagreement. Thus, the social divide was once again transformed and did not disappear with the development of science.

Finally after thousands of years of development, with the birth of modern natural science, mathematics and physics and other natural sciences have changed qualitatively, Newton's system of mechanics and calculus, Einstein's theory of relativity, and the subsequent generation of quantum mechanics and a series of scientific knowledge and scientific methods, has greatly changed the face of the world. The two industrial revolutions revolutionized the way people transformed the world, with productivity sufficient to feed a population a hundred times larger than in the past. People have since entered the modern world, where science has gradually become a faith and can be considered the highest ideal in the hearts of many people, and countless scientists have a high scientific spirit and scientific attitude. It is no exaggeration to say that without science there would be no modern world for us, but one question is whether science has completely ended social differences? The answer is clearly no.

Throughout today's society, in China for example, people's living standards have indeed been greatly improved, the problem of having enough to eat has been completely solved, and the bad habits of the feudal era have been eliminated, and the people have become the masters of their own house, however, social differences still exist.

The first is the uneven distribution of educational resources. Children from backward areas do not get quality education from childhood, and their scientific level is backward, making it difficult for them to perform high-level jobs when they grow up, and they are forced to perform manual labor, which further shackles the growth of the next generation, thus constituting a cycle, and how to break this cycle is a problem worth thinking about, which will be discussed subsequently. And because of their lack of knowledge, most of their qualities are not as good as those of highly educated people, and communication and dialogue between them is almost impossible, so a generation gap between them arises, and some intellectuals tend to hold a stereotype of those who have not received education.

Secondly, science is also the cornerstone of the current financial market to operate on, after all, capital is also because the emergence of the Internet and can circulate faster, in the process the rich may not be permanently rich, but the vast majority of poor people can hardly escape the trap of poverty, the gap between the rich and the poor is still difficult to close. Even so, a norm has been formed.

Furthermore, because science and technology, a derivative of science, are constantly ‘evolving’ at an exponential rate, bringing medical security to people while also contributing to the explosion of the global population and the intensification of aging, and thus the mismatch between the number of people and the number of resources has become the new norm. At the same time, the continuous urbanization has led to the ‘eviction’ of the countryside, and the continuous housing renovation has changed the living scenario of the original inhabitants, a confrontation between the nostalgia for the old life and the ideology of the external transformation, which will bring new social divisions.

From this, we can see that although the social differences brought about by the complete antagonism of classes in the feudal period have disappeared under the baptism of science, but replaced by new forms of social differences, science is not only a bridge between the social differences of the two eras, but also equivalent to a conversion agent, in the destruction of a social difference while also constantly creating new social differences, like Sisyphean constantly pushing the stone to the top of the mountain but again let the stone It seems that science itself carries a hint of absurdity, which makes people feel its own sense of futility and powerlessness, and we naturally ask: Can science really never eliminate all social differences? Before answering this question, let us return to the original question: how to perceive scientific omnipotence.
Looking back to the 1920s, Mr. Liang Qichao made a very famous statement against the "omnipotence of science": "The Europeans had a big dream of the omnipotence of science, but now they call science bankrupt. This is a major key to the recent change in thinking ...." \cite{liang_1920}

In his view, science, with objective knowledge as its home, has failed to change people's inner psychology and value system, and cannot be the antidote to all problems. In fact, from my analysis of the dynamics of science, we can see that science in its dynamic form shows that scientific knowledge is constantly evolving, and in this process new scientific paradigms are constantly emerging, and there is no so-called end point, that is, science has no end, and there is always unknown knowledge waiting to be discovered.

It is then clear from the role science has played in social divisions that science has always played the role of a transforming agent but has never been able to eradicate social divisions, and the severity of scientific divisions in modern times may be comparable to that of other times. It seems to me that since science can act as a conversion agent, it is possible to think in terms of the degree of social disagreement, that is, to allow science to contribute to society by converting deeper social disagreements into shallower ones.

5 Advice

First of all, the limited resources and unfair distribution determine that the current society cannot guarantee everyone to enjoy a high quality of life, and the equality is only relative, which inevitably causes people in the disadvantaged class to be dissatisfied with the society, and almost only through illegal acts, such as theft, robbery to obtain the means of living and achieve the repression of inferiority complex due to the long-term unfair encounter.

Science is a way out, however, by promoting the generation of technologies related to resource regeneration and equity protection through scientific knowledge, and by allowing science to contribute to the improvement of productivity for the poor and the reduction of social divisions.

Secondly, nowadays, people have different levels of education, there is a gap between different groups, it is difficult to reach a consensus on different issues, and conflicts naturally arise, and with the uneven distribution of educational resources and deepening, gradually become part of the social divide, it is worth starting from the perspective of science, using the stillness of science, that is, let the spirit of science and scientific attitude to play a role, and to start from childhood, let the spirit of science and scientific attitude into the school and become the mainstream of values, to a scientific way of life, so that people have a common topic - science, and this is a unified value that can cross the rich and poor and class, may be able to reduce the differences in the current discourse exchange.

Finally, to play the role of scientific leaders, let scientists become social role models, rather than the so-called star actors, so as to reduce the blind star-catching activities in society, because these groups of star-catchers in the value level there is a huge gap, and with the increase of social entertainment and deepening, subconsciously in the formation of a value confrontation and indoctrination, reducing people's sanity, but if we let But if scientists become role models for people, it can reduce this divide to a certain extent, because science itself has the characteristic of rationality.

6 Summary

In his book From Chaos to Order, Prigogine writes: "Science is the transformation of a complex, diverse world into a simple linear one, or at most the approximation of a nonlinear deterministic one with linearity." \cite{prigogine_1985}

It is true that science is not omnipotent, as I have argued before, it cannot explain the world, nor can it completely end social differences, but it has played a decisive role in the development of mankind, it has led mankind to a path completely different from that of any living being in the world, in ancient times, in the present, and in the future, but the end of this path is unknown, and looking back at the path we have taken. Looking ahead, it is up to mankind itself whether science will become the new God or whether it will push mankind completely to the Day of Judgment.

Therefore, if we get the right way, make full use of the benign side of its social divergence transformer, and transform the existing social divergence into a lighter social divergence, the future will be bright; if we lose the right way, intensify the social divergence, and cause a deeper confrontation of consciousness, the sword of Damocles will eventually fall, and that may be the end of everything, but it will be a brand new beginning.

References


