

“The Strong Programme” and the Rationality Debate

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Abstract: Various approaches have been made for understanding the nature of science and scientific knowledge. The social factors that played some role during the choice of scientific theories (like the theory of evolution) in the nineteenth century popularised the opinion that the scientific knowledge is the subject of a sociological research. During the ongoing discussions, one of the explanation or the justification models that was proposed is known as “the Strong Programme.” The main claim of “the Strong Programme” is that the social factors have a determining role for the choice of scientific theories, rather than the rational and universal criteria one may expect. Hence, those who were behind this view rejected all of the rational analyses made for the sciences and the scientific methods. In this paper, we try to investigate the validity of the claims of “the Strong Programme,” and to clarify whether it is possible to understand the real nature of science without any rational approach. It is argued that it would be insufficient to determine the content of the science merely by the social factors, the natural facts might be meaningful by themselves as well.

Keywords: Strong Programme, Scientific Method, Sociology of Knowledge, Rationality, Barry Barnes, David Bloor

“Güçlü Program” ve Ussallık Tartışması

Özet: Bilimin ve bilimsel bilginin doğasını açıklamak için farklı pek çok yaklaşım geliştirilmiştir. Özellikle ondokuzuncu yüzyıldaki bazı bilimsel kuramların (evrim kuramı gibi) tercihinde toplumsal etmenlerin rolünün gözlemlenmesi, bilimsel bilginin toplumbilimsel bir araştırma konusu olduğu kanısını yaygınlaştırmıştır. Bu süreçte ortaya konan açıklama ve gerekçelendirme modellerinden biri de “Strong Programme” (Güçlü Program) olarak anılandır. “Strong Programme”ın temel savı, bilimsel kuramların tercihinde sanıldığı gibi ussal ve evrensel ölçütlerin değil, toplumsal etmenlerin belirleyici olduğu yönündeydi. Dolayısıyla bu görüşü savunanlar, bilim ve bilimsel yöntem için ortaya konan tüm ussalcı çözümlenmeleri reddettiler. Bu çalışmada, “Strong Programme”ın ileri sürdüğü savların haklılığı ve sanıldığı gibi usçu bir yaklaşım olmaksızın bilimin gerçek doğasını anlamının olanaklı olup olmadığı soruşturulmaktadır. Bilimin içeriğinin bütünüyle ve sadece toplumsal etmenlerce belirlenemeyeceği, doğa olaylarının da kendi başlarına anlamlı olabileceği ileri sürülmektedir.

Anahtar sözcükler: Güçlü Program, Bilimsel Yöntem, Bilgi Sosyolojisi, Ussallık, Barry Barnes, David Bloor

Neslioğlu Serin, Funda. (2017). “The Strong Programme” and the Rationality Debate. *Kilikya Felsefe Dergisi* (2). pp. 41-50.

Philosophy is generally concerned with the explanations about the real structure of the nature, but the types of the explanations proposed may be very diverse. The basic reason of this diversity arises from which method as a means has been used for explaining. The main characteristics of all methods or procedures used for the proper explanation are stated often in the form of principles, specifying what should be done or avoided. For example, in the inductive method the basic goal is defined as to search for *universality* and *objectivity*; thus, what should be abandoned are *particularity* and *subjectivity* as obstacles for achieving its success. This subjectivity, as implication of social character, for inductivist, cannot be a source of truth, for the spirit of man is “a thing variable... governed it were by chance.” (Bacon, 1900, p. 70). In fact, if we consider the starting points of the methods of traditional philosophy, we can conclude that the traditional philosophy (that is the period from Aristotle to Descartes / Deductivist Model and also from Newton’s time onward / Inductivist Model) could not have allowed a substantive role to particularity, subjectivity; thereby claiming that the success of science supplied without appealing to anything social.¹

The guiding motive for such an attitude of the traditional philosophy arises from the belief that science is a unique mode of inquiry and its methods embody a timelessly valid model of rationality. According to this understanding, what is social, ideological or particular is a distortive force in search for the universality and objectivity. Such a conception of science is based on the claim that there is a comprehensive rationality in the nature of scientific knowledge. There was an assumed methodological unity for various kinds of scientific inquiry; thus science was described as the form of rationality which was outside time and outside history.

As a result of the idea of methodological unity, in the philosophy of science there have been attempts to reduce the methodology of science to one *metamethod*. This was, for example, “psychology” (Giere), “history of science” (Laudan), “evolutionary biology” (Campell) or “sociology” (Fuller). According to them, their metamethods legitimate the success of science or confirm the truth of theories. But their models of rationality and explanations, each of which claims to be a superior form of rationality, imply many requirements; for example, a privileged perspective, standards or certain ways of describing events. But there is no superior form of rationality; each of those forms is only one among many

¹ I should point out that in this study the statement of *traditional philosophy* shall be taken as especially a philosophical approach seeing *social dimension* as something to be avoided..

alternative forms of rationality. This means also that an ultimate source of knowledge or epistemological authority simply do not exist; for scientific knowledge grows in different directions, and there are various ways to develop knowledge. Thus, the methodology of science itself was argued as being not unitary; since science has developed into the independent domains, and experiment has a life its own (Sahepere 1982, pp. 485-525).² This characteristic of the experiment implies also what Feyerabend describes a *non-foundational epistemology* as a rejection of the essentialist view of science. The basic aim of philosophers of science as Feyerabend, Kuhn and Lakatos in their rejection of the essentialist view of science is to remark the difficulties of finding a way of reducing the scientific laws to finite sets of observational statements. They do not claim that the idea of rationality should be abandoned entirely in science, but only, we have to give up the claim that there are absolute or general rules in science. As Feyerabend rightly remarks “there are always circumstances when it is advisable not only to ignore the rule, but adopt its opposite”. (1975, p. 23)

The most important reason of such a radical change in the traditional scientific rationality is “social turn” in the philosophical studies of science. After the sociology of science had been seen as a new and fruitful branch of the broader discipline of sociology by the end of 1930, in the philosophical studies of science there was a gradual tendency to abandon all unitary and monolithic schematisations of the scientific knowledge which were aiming at reducing paths of the development in all the sciences to a single process. By presentation of the sociology of science as a new discipline, many philosophers (or sociologists) saw the activities of scientists as the objects of social inquiries and then tried to explain not only these activities from a sociological point of view, but also the nature of scientific knowledge only within the social settings of the scientific inquiry. In the attempt of explaining the scientific activities in the terms of sociology there was a developed variety of controversy in sociological programs. One of those programs was the “Strong Programme” particularly associated with David Bloor who shaped its principles.

The main claim of the “strong programme” is grounded on the idea that scientists are led to accept scientific theories by the external social factors rather than only by the experimental evidence. Observation, experiment and our natural predispositions to reason in certain ways may

² The implications of the disunity of science and the independency of theory in the scientific activities were studied also by Ian Hacking, Peter Galison, Artur Fine and John Dupré.

play an important role in limiting the wide range of theories the scientists find acceptable, but what makes the scientists accept a certain theory will always be some social factor which is not connected with the strength of the experimental evidence. This claim rests on the basic distinction between “intellectual systems” as the psychological framework of the individual and “social system” as social environment. For this reason, the basic characteristic of the claim is formed by its attempt on explaining the former as an effect of the latter.

The “strong programme” implies the idea of the disunity of science and the independency of theory in the scientific activities. Because of such an approach to science, the philosophical investigation of science, from the aspect of ontology and/or epistemology, was seen as something that should have been avoided. For it is accepted that sociological inquiry about knowledge should be made without concern for the epistemological status of the beliefs. For example, Barry Barnes, in his *Scientific Knowledge and Sociological Theory*, suggests to make “a complete separation of the questions of belief and the questions of knowledge” (Barnes 1974, p. 152). Such a separation, in fact, render sociology of knowledge and epistemology reciprocally unconnected.

Barnes and Bloor, in their article “Relativism, Rationalism and the Sociology of Knowledge”, approach to *knowledge* as “any collectively accepted system of beliefs” rather than as the “justified true belief” (Barnes and Bloor 1982, pp. 21-47). Thus in the search for knowledge the basic goal of the sociology of knowledge for them is to understand the relation between the belief systems and sociocultural environment by causal explanation, without considering that the beliefs are true/false or the inferences rational/irrational. From this point of view the “strong programme” is a variant of *relativism*; for it holds that whether a theory is credible or justified is not a matter of the available experimental or observational data or the strength of the inference from that set of data to the theory. If the strong programme is right, what makes some theory a part of current scientific knowledge is determined by social influences which have nothing to do with the experimental or observational data. Barnes and Bloor claim that the strong programme is a relativism which is not logically problematic because it does not deny that some theories are true and others false, or that some are rational and others irrational. As Barnes and Bloor put it:

The relativist, like everyone else, is under the necessity to sort out beliefs, accepting some and rejecting others. He will naturally have preferences and these will typically coincide with those of others in his locality. The words 'true' and 'false' provide the idiom in which those evaluations are expressed and the words 'rational' and 'irrational' will have similar function.... The crucial point is that the relativist accepts that none of the justifications of his preferences can be formulated in absolute or context-independent terms. In the last analysis, he acknowledges that his justifications will stop at some principle or alleged matter of fact that only has local credibility.... For the relativist there is no sense attached to the idea that some standards or beliefs are really rational as distinct from merely locally accepted as such. Because he thinks that there are no context-free or super-cultural norms of rationality, he does not see rationally and irrationally held beliefs as making up two distinct and qualitatively different classes of things. They do not fall into two different natural kinds which make different sorts of appeal to the human mind, or stand in a different relationship to reality, or depend for their credibility on different patterns of social organization. Hence the relativist conclusion that they are to be explained in the same way. (Barnes and Bloor 1982, pp. 27-28)

Here "falsity" becomes a mere deviation from a social norm; in other words, there is no longer need for a faculty (for example, *reason*) which somehow transcends the social boundaries in order to ascertain truth. This means that if we accept intellectual system as an *interconnected set of beliefs* expressing the order that the holders find in their experience, we do not need an outside assessment of the truth for this belief system. And also if intellectual systems are not static, we cannot have any external criteria in order to justify them; but they can be judged only by criteria of rationality *internal* to these systems. So there is no need any absolute or universal guarantor in order to distinguish between "true" and "false". The underlying theme of Barnes's and Bloor's program is that something is an evidence for something else only in *a certain context*, and such a relation is itself a "prime target for sociological inquiry and explanation" (Barnes and Bloor 1982, p. 29).

A similar *context-dependent rationality* has been argued by Peter Winch. Winch thinks that rationality itself depends on the context and/or culture. According to him, concurrence among the standards of rationality in

various societies is not unavoidable, sometimes they do not concur. Thus he reaches a conclusion that “what we are concerned with are differences in *criteria of rationality*.” His point of view may be summarised as follows:

... criteria of logic are not a direct gift of God, but arise out of, and are only intelligible in the context of, ways of living and modes of social life. It follows that one cannot apply criteria of logic to modes of social life as such. For instance, science is one such mode and religion is another; and each has criteria of intelligibility peculiar itself. So with in science or religion, actions can be logical or illogical: in science, for example, it would be illogical to refuse to be bound by the results of a properly carried out experiment; in religion it would be illogical to suppose that one could pit one’s own strength against God’s and so on. (Winch 1958, pp. 100-1)

In fact, Winch, as seen in the above passage, tries to overcome the problem of rationality, and especially epistemological difficulties of the early theories of sociology of knowledge by applying the contextual criteria. But in his *internalist* work, like the most of the other studies about the sociology of knowledge, it is not clear how he links the “logic of science” with the “logic of social life”. For when he determines the basic concern as the differences in *criteria of rationality*, or in those two logics, he tends to understand the differences by asking only *what* those criteria are. But, ascertaining the *what* of criteria, or of the belief systems also and inescapably involve us in grasping the *how* and *why* of criteria, or of belief. The sociologists of knowledge as participating players are implicitly involved in evaluating beliefs within a context, or its logic when they try only to describe and explain them by asking *what* those are. For, as McCarthy points out, meaning and validity are internally connected with reasons; so when we try to understand a context, or a belief system, we try to understand not only what it is, but also *how* one reasoned about it (McCarthy 1988, p. 93). As Rescher notes, “There is no rationality without an appropriate procedure for giving a *rationale*—a suitable fabric of good reasons in cases of the sort at issue”. (Rescher 1977, p. 76)

Winch, especially, is concerned with the attempt to impose standards of scientific rationality on the beliefs and practices of “primitive societies”. If, as he proposed, there are discrete contexts, or universes of discourse, each provides a distinct view of what it means to think and act in a rational manner. His context-dependent view implies also the absence of a single,

arbitrary standard against which the rationality of a context, or culture and others is to be judged. But if we accept Winch's view, then, we should also accept that the criteria of the rationality that the scientists encountered in a particular culture or influenced him under a special context may lead him to accept the irrational as rational. Such a determination could be very true if all criteria were culture- or context-dependent.

On the other hand, when Barnes and Bloor underline the theoretical advantages of the strong programme over rival programmes, they argue that the strong programme is simpler and more widespread than the other programmes; for it holds that the beliefs of the members in all kind of communities are to be explained in the same kind of way. Since the beliefs of individuals in communities that are religious, scientific or political, rationalistic or superstitious all have the same kind of explanation, Barnes and Bloor object to the rationalist philosophers. They claim that the strong programme has advantages over the views of rationalists; for rationalist philosophers think that rational or true beliefs do not need to be explained causally because they are rational or true, whereas irrational beliefs need causal explanations. Rationalists claim that scientists' trust in scientific subjects can be explained by showing that the beliefs are justified on the evidence available. Barnes and Bloor maintain that the strong programme is more scientific than the accounts of rationalists, because it supplies *well-proportioned* explanations of beliefs so that we can use the same *types* of causal explanations for all beliefs that are given.

When Winch presents his thesis in its direct concern with particular universes of discourse, he grounds the determination of rationality in language:

Reality is not what gives language sense. What is real and what is unreal shows itself in the sense that language has. Further, both the distinction between the real and the unreal and the concept of agreement with reality themselves belong to our language. (Winch 1970, p. 82)

And he adds, "logical relations between propositions ... depend on social relations between men" (Winch 1958, p. 126). It follows from Winch's claim that to understand the language of a society (like a context, culture, etc.) we require definitely a common reality that exists, this means that the shared outcome of language and reality form a basis on which all the

members of that society agree about all the *facts*.

Human beings, as participants of society, don't always agree about all facts. Any kind of agreement cannot be used as a validity criterion in every context. A mistake Winch commits himself, like many sociologists of science, is to suppose science being comparable to other forms of social agreement. The other point ignored by him is that if we talk about logical relations in the language of a society, we accept also that these relations are operable on the logical rules of that language, and it is very clear that we cannot take all these rules, such as the law of contradiction, the law of identity, etc., as pure matters of convention. As Lukes points out, not all criteria depend a context, some of them are universal. (Lukes 1995, p. 293)

Lukes, as against to Winch, argues that:

...beliefs are not only to be evaluated by the criteria that are to be discovered in the context in which they are held; they must also be evaluated by criteria of rationality that simply are criteria of rationality, as opposed to criteria of rationality in context. (Lukes 1995, p. 293)

According to him, there are two kinds of rational criteria: we, have on the one hand, some universal criteria of rationality, these are the ones that we may relevantly apply to all beliefs in any context, and on the other hand we have some others which are context dependent criteria and we can discover these by investigating the context, and they are relevantly applicable to beliefs in that context (1995, p. 293). As Lukes puts it:

One may conclude that all beliefs are to be evaluated by both rational [universal] and rational [context-dependent] criteria. Sometimes, as in the case of religious beliefs, rational [universal] truth criteria will not take the very far. Often rational [universal] criteria of logic do not reveal of "provides a reason for". Sometimes rational [universal] criteria appear less important than "what the situation demands". In all these cases, rational [context-dependent] criteria are illuminating. But they do not make rational [universal] criteria dispensable. They could not, for the latter, specify the ultimate constraints to which thought is subject: that is, they are fundamental and universal in the sense that any society which possesses what we may justifiably call

a language must apply them in *general*, though particular beliefs, or sets of beliefs, may violate them. If both sorts of criteria are required for the understanding of beliefs (for they enable us to grasp their truth conditions and their interrelations), they are equally necessary to the explanations of why they are held, how they operate and what their social consequences are. Thus only by the application of rational [universal] criteria is it possible to see how beliefs which fail to satisfy them can come to be rationally criticized, or fail to be. On the other hand, it is usually only by the application of rational [context-dependent] criteria that the point and significance that beliefs have for those that hold them can be grasped. Rational [universal] criteria and rational [context-dependent] criteria are necessary both to understand and explain. (1995, p. 295)

When Lukes spells out the requirements of both the context dependent rationality and context independent rationality, i.e. a universal rationality, he establishes the invalidity of Barnes-Bloor's claims about truth and falsity. Since, as Karl Marx also pointed out in *Theses on Feuerbach*, despite the fact that we know that we are fallible and none of our firm beliefs may not remain valid wholly in future, we still keep making and defending claims to truth here and now.

As a conclusion, without further ado we may consider that Barnes-Bloor's studies about the sociology of knowledge do not provide us with any unbroken tie between the content of science and the concerns of sociology of knowledge. One of the reasons of their problematic situation stems from their arguments for the strong programme is that it is more scientific than rationalism. This argument rests on their idea about rationalism. They take the rationalism as unscientific, because according to them it uses reasons rather than causal explanations for rational beliefs, uses different types of explanations to explain rational and irrational beliefs, and excludes sociological explanations of how scientists gain certain beliefs.

While many rationalists separate the task of giving causal accounts of beliefs from the task of adducing reasons for them, they view that the reasons why scientists gain certain beliefs also explain those beliefs. According to this kind of rationalism, reasons are real causes that bring about beliefs as well as sometimes justifying them. At this point we cannot conclude that the rationalists have an unscientific analysis of beliefs

(Laudan 1984, pp. 41-73). Historical accounts of scientists' beliefs which concentrate on their gaining certain things for good reasons may be as scientific as accounts which do not.

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