

Paul Karl Feyerabend (Epistemological Anarchism)

Epistemological anarchism is an epistemological theory advanced by Austrian philosopher of science Paul Feyerabend which holds that there are no useful and exception-free methodological rules governing the progress of science or the growth of knowledge. It holds that the idea of the operation of science by fixed, universal rules is unrealistic, pernicious, and detrimental to science itself.

The use of the term anarchism in the name reflected the methodological pluralism prescription of the theory, as the purported scientific method does not have a monopoly on truth or useful results. Feyerabend once famously said that because there is no fixed scientific method, it is best to have an "anything goes" attitude toward methodologies. Feyerabend felt that science started as a liberating movement, but over time it had become increasingly dogmatic and rigid, and therefore had become increasingly an ideology and despite its successes science had started to attain some oppressive features and it was not possible to come up with an unambiguous way to distinguish science from religion, magic, or mythology. He felt the exclusive dominance of science as a means of directing society was authoritarian and ungrounded. Promulgation of the theory earned Feyerabend the title of "the worst enemy of science" from his detractors.

In his books **Against Method** and **Science in a Free Society** Feyerabend defended the idea that there are no methodological rules which are always used by scientists. He objected to any single prescriptive scientific method on the grounds that any such method would limit the activities of scientists, and hence restrict scientific progress. In his view, science would benefit most from a "dose" of theoretical anarchism. He also thought that theoretical anarchism was desirable because it was more humanitarian than other systems of organization, by not imposing rigid rules on scientists.

For is it not possible that science as we know it today, or a "search for the truth" in the style of traditional philosophy, will create a monster? Is it not possible that an objective approach that frowns upon personal connections between the entities examined will harm people, turn them into miserable, unfriendly, self-righteous mechanisms without charm or humour? "Is it not possible," asks Kierkegaard, "that my activity as an objective [or critico-rational] observer of nature will weaken my strength as a human being?" I suspect the answer to many of these questions is affirmative and I believe that a reform of the sciences that makes them more

History of Scientific Thought

Topic 13

anarchic and more subjective (in Kierkegaard's sense) is urgently needed. *Against Method*. p. 154.

Feyerabend's position was seen as radical in the philosophy of science, because it implies that philosophy can neither succeed in providing a general description of science, nor in devising a method for differentiating products of science from non-scientific entities like myths. (Feyerabend's position also implies that philosophical guidelines should be ignored by scientists, if they are to aim for progress.)

To support his position that methodological rules generally do not contribute to scientific success, Feyerabend provides counterexamples to the claim that (good) science operates according to a certain fixed method. He took some examples of episodes in science that are generally regarded as indisputable instances of progress (e.g. the Copernican revolution), and argued that these episodes violated all common prescriptive rules of science. Moreover, he claimed that applying such rules in these historical situations would actually have prevented scientific revolution.

One of the criteria for evaluating scientific theories that Feyerabend attacks is the consistency criterion. He points out that to insist that new theories be consistent with old theories gives an unreasonable advantage to the older theory. He makes the logical point that being compatible with a defunct older theory does not increase the validity or truth of a new theory over an alternative covering the same content. That is, if one had to choose between two theories of equal explanatory power, to choose the one that is compatible with an older, falsified theory is to make an aesthetic, rather than a rational choice. The familiarity of such a theory might also make it more appealing to scientists, since they will not have to disregard as many cherished prejudices. Hence, that theory can be said to have "an unfair advantage".

Feyerabend was also critical of falsificationism. He argued that no interesting theory is ever consistent with all the relevant facts. This would rule out using a naïve falsificationist rule which says that scientific theories should be rejected if they do not agree with known facts. Among others, Feyerabend uses an intentionally provocative description of "renormalization" in quantum mechanics: "This procedure consists in crossing out the results of certain calculations and replacing them by a description of what is actually observed. Thus one admits, implicitly, that the theory is in trouble while formulating it in a manner suggesting that a new principle has been discovered" *Against Method*. p. 61. While quantum theorists were working on models that did not run into this problem, Feyerabend advocated that scientists should use ad hoc methods

History of Scientific Thought

Topic 13

such as renormalization. Indeed that such methods are essential to the progress of science for example because "progress in science is uneven". For instance, in the time of Galileo, optical theory could not account for phenomena that were observed by means of telescopes. So, astronomer who used telescopic observation had to use ad hoc rules until they could justify their assumptions by means of "optical theory".

Feyerabend was critical of any guideline that aimed to judge the quality of scientific theories by comparing them to known facts. He thought that previous theory might influence natural interpretations of observed phenomena. Scientists necessarily make implicit assumptions when comparing scientific theories to facts that they observe. Such assumptions need to be changed in order to make the new theory compatible with observations. The main example of the influence of natural interpretations that Feyerabend provided was the tower argument. The tower argument was one of the main objections against the theory of a moving earth. Aristotelians assumed that the fact that a stone which is dropped from a tower lands directly beneath it shows that the earth is stationary. They thought that, if the earth moved while the stone was falling, the stone would have been "left behind". Objects would fall diagonally instead of vertically. Since this does not happen, Aristotelians thought that it was evident that the earth did not move. If one uses ancient theories of impulse and relative motion, the Copernican theory indeed appears to be falsified by the fact that objects fall vertically on earth. This observation required a new interpretation to make it compatible with Copernican theory. Galileo was able to make such a change about the nature of impulse and relative motion. Before such theories were articulated, Galileo had to make use of ad hoc methods and proceed counterinductively. So, "ad hoc" hypotheses actually have a positive function: they temporarily make a new theory compatible with facts until the theory to be defended can be supported by other theories.

Feyerabend commented on the Galileo affair as follows:

The church at the time of Galileo was much more faithful to reason than Galileo himself, and also took into consideration the ethical and social consequences of Galileo's doctrine. Its verdict against Galileo was rational and just, and revisionism can be legitimized solely for motives of political opportunism.

History of Scientific Thought

Topic 13

Together these remarks sanction the introduction of theories that are inconsistent with well-established facts. Furthermore, a pluralistic methodology that involves making comparisons between any theories at all forces defendants to improve the articulation of each theory. In this way, scientific pluralism improves the critical power of science.

According to Feyerabend, new theories came to be accepted not because of their accord with scientific method, but because their supporters made use of any trick – rational, rhetorical or ribald – in order to advance their cause. Without a fixed ideology, or the introduction of religious tendencies, the only approach which does not inhibit progress (using whichever definition one sees fit) is "anything goes": "'anything goes' is not a 'principle' I hold... but the terrified exclamation of a rationalist who takes a closer look at history." (Feyerabend, 1975).

Feyerabend considered the possibility of incommensurability, but he was hesitant in his application of the concept. He wrote that "it is hardly ever possible to give an explicit definition of [incommensurability]" *Against Method*. p. 225., because it involves covert classifications and major conceptual changes. He also was critical of attempts to capture incommensurability in a logical framework, since he thought of incommensurability as a phenomenon outside the domain of logic. In the second appendix of *Against Method* (p. 114), Feyerabend states, "I never said... that any two rival theories are incommensurable... What I did say was that certain rival theories, so-called 'universal' theories, or 'non-instantial' theories, if interpreted in a certain way, could not be compared easily." Incommensurability did not concern Feyerabend greatly, because he believed that even when theories are commensurable (i.e. can be compared), the outcome of the comparison should not necessarily rule out either theory. To rephrase: when theories are incommensurable, they cannot rule each other out, and when theories are commensurable, they cannot rule each other out. Assessments of (in)commensurability, therefore, don't have much effect in Feyerabend's system, and can be more or less passed over in silence.

In *Against Method* Feyerabend claimed that Imre Lakatos's philosophy of research programmes is actually "anarchism in disguise", because it does not issue orders to scientists. Feyerabend playfully dedicated *Against Method* to "Imre Lakatos: Friend, and fellow-anarchist". One interpretation is that Lakatos's philosophy of mathematics and science was based on creative transformations of Hegelian historiographic ideas, many associated with Lakatos's teacher in Hungary Georg Lukács. Feyerabend's debate with Lakatos on scientific method recapitulates

History of Scientific Thought

Topic 13

the debate of Lukács and (Feyerabend's would-be mentor) Brecht, over aesthetics several decades earlier.

While Feyerabend described himself as an "epistemological anarchist", he explicitly disavowed being a "political anarchist". Some anarchist-leaning critics of science have agreed with this distinction, while others have argued that political anarchism is tacitly embedded in Feyerabend's philosophy of science.