

Péter Hartl

University of St Andrews, St Leonard's College, Departments of Philosophy, Edgecliffe, The Scores,
UK-KY16 9AR St Andrews, Fife
pzh@st-andrews.ac.uk

Michael Polanyi on Freedom of Science*

Abstract

In the present essay I investigate Polanyi's main arguments for academic freedom. Academic and political freedom are closely related to each other: if state takes control over science, it will lead to the collapse of freedom itself in the whole society. His arguments against totalitarianism rely on his anti-positivist philosophy of science. He diagnoses totalitarianism as a denial of academic freedom which is based on a pragmatist view of science and instrumentalist interpretation of moral values. Polanyi's idea of science is a spiritual, idealistic description of a community of free intellectuals who are passionately committed to seeking the truth and have an autonomous community with its own rules and autonomous direction. Seeking the truth for its own sake is the essential goal of science, which can be accomplished only if it remains free from political, ideological and economical influences. I will argue that Polanyi's insights can still be relevant today, when science can become an instrument of profit-oriented practical needs instead of seeking the truth itself, and the humanities (including philosophy) are often considered unnecessary.

Key words

academic freedom, Michael Polanyi, pure science, scientific authority, self-coordination, tacit judgements, totalitarianism, tradition, truth

1.

Michael Polanyi's scientific work and his contribution to philosophy of science are widely known, but the connections between his political views and his theory of knowledge are still unexplored in many aspects. Nevertheless, it seems obvious that Polanyi's philosophy of science was motivated by his own moral and political philosophy, namely his ideas about the role of scientists as free intellectuals in a democratic society. Polanyi himself declares that knowing and morality interweave in many ways. Firstly, knowledge inevitably has a moral character, since justification of the claims of science is not based on impersonal, abstract methodological norms, but tacit rules committed by a community of scientists. Secondly, our conception of the role and meaning of science is deeply rooted in our commitments to moral values, such as freedom and justice.

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Polanyi alludes to his conversation with Bukharin in 1935 about the superfluity of pure science as a decisive episode of his intellectual life.¹ Bukharin argued from a Marxist standpoint that the ultimate aim of science is to serve practical, economical needs and interests. Arguing for pure science, which seeks the truth for its own sake, is not only an old-fashioned, but also a futile idea. Of course, this view relies on the communist conception of central economic planning: like production and distribution of goods, scientific research must be centrally directed and controlled by political authorities.

In 1938 the British Association for the Advancement of Science founded a new division which aimed to create social guidance for the progress of science. The idea of planning science became relatively popular, but after 1945 the movement lost its significance.² Nevertheless, we are tempted to say that nowadays it is a more and more widely adopted view that science must serve the public good, thus state should take control above scientists in some extent.

It is worth to make a clarification. The term ‘science’ might have a broad and a narrow meaning as well. Basically, Polanyi’s arguments focus on pure and natural sciences, but his conception might be also applied to any systematic, intellectual activity which aims the truth (including humanities). We will back to this issue later.

The basic questions are: what role should science play in society, and why should science be funded? The popular view is that science must have practical benefits for society and serve the “common good” (whatever that would mean). This view goes hand in hand with utilitarianism, according to which the goal of “understanding nature” is subordinated to economical goods and public welfare.

In contrast to Marxist ideologists and some of his contemporaries in Britain (for example, John Desmond Bernal) Polanyi claims that science is essentially a truth-seeking practice. His idea of science is a spiritual, idealistic description of a community of free intellectuals, who are passionately committed to seeking the truth. Polanyi argues that science does not need to have special obligations to society, since it is only concerned with the deeper understanding of nature. Seeking the truth for its own sake is the essential goal of science, and it can follow and accomplish this goal only if it remains free from every social, economic and other external interest and influence. Consequently, scientists must have an autonomous community with their own rules and autonomous “government”.

In my essay I would like to present and examine Polanyi’s views about free science and society. I will summarize and analyse his main arguments against centrally planned science, and for the idea of free republic of scientists. I will also present some of his main economic arguments regarding free market and society. Perhaps Polanyi’s ideas about academic freedom and the republic of science seem to be old-fashioned now. One might argue there is a false dichotomy here: even though the idea of centrally planned science is untenable, it does not follow that Polanyi’s idealistic conception of academic freedom is the best possible alternative. Nonetheless, I will argue that though the main target of his argumentation is the totalitarian control of science, he also calls attention to possible dangers of controlled science in capitalist, democratic societies. Therefore, we have a good reason to think that his views can be relevant today as well.³ Of course, I consider some difficulties and possible objections against his views. All in all, I think we should take Polanyi’s warnings of the dangers of economic influence on science seriously, even though his main conclusions should be modified and put in a more moderate form.

2.

Polanyi makes clear that his conception of free science has strong political implications: his idea of academic freedom serves as the basis for his political idea of freedom.⁴ The free society of scientists (the “republic of science”) is a model for a free society of autonomous individuals. Therefore, his warnings of the dangers to academic freedom in totalitarian states (in Nazi Germany and the Soviet Union) should not be seen merely as a theoretical explication about the features of scientific research. He argues that if the state takes control over science (and economy), and science becomes an instrument of political-ideological goals, it inevitably leads to the collapse of freedom itself in the whole society.⁵

Modern democracies value freedom very high; however, according to Polanyi, these considerations are mostly based on an individualistic, liberal conception of freedom which should be reconsidered in order to convincingly defend academic freedom against its enemies. He argues that attempting to defend free science on utilitarian or sceptical grounds undermines what they are invoked to defend. Therefore, Polanyi does not seek to endorse free society by appealing to the importance of private liberty, rather, he tries to support it by appealing to positive, public liberty which involves our pursuit of supposedly objective ideals, such as truth, justice, beauty. In »Perils of Inconsistency« he offers a detailed narrative about modernity and concludes that the collapse of freedom in the 20th century totalitarian states was an outcome of an internal contradiction in the classical, liberal conception of liberty. In other words, denying reality of transcendent, moral ideas opens a door to totalitarianism. He writes:

“We can see how the philosophies which guided these revolutions and destroyed liberty wherever they prevailed, were originally justified by the anti-authoritarian and sceptical formula of liberty. They were indeed anti-authoritarian and sceptical to the extreme. (...) If thought and reason are nothing by themselves, then it is meaningless to demand that thought be set free. (...) The assumption of universal standards of reason was implicit in the hopes of Enlightenment and the philosophies which denied the existence of such standards denied therefore the foundations of all these hopes.”⁶

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Michael Polanyi, *Science, Faith and Society*, Phoenix Books, The University of Chicago Press, Chicago, 1964, p. 8.

2
Ibid., p. 7.

3
His warning is unambiguous: “Even in countries where science is still free we are experiencing today a weakening of the principles of scientific autonomy. (...) Our analysis seems to leave no doubt that if this kind of movement prevailed and developed further: if attempts to suppress the autonomy of science, such as have been made in Russia since 1932, became world-wide and were persisted in for time, the result could only be a total destruction of science and academic life.” Michael Polanyi, “Self-Government of Science”, in: Michael Polanyi, *The Logic of Liberty*, Routledge and Kegan Paul Ltd, London, 1951, p. 67.

4
“Academic freedom of course never an isolated phenomenon. It can exist only in a free

society; for the principles underlying it are the same on which the most essential liberties of society as a whole are founded.” Michael Polanyi, “Foundations of Academic Freedom”, in: *The Logic of Liberty*, p. 45.

5
“Public liberty can be fully upheld as an aim in itself, insofar as it is the method for the social management of purposes that are aims in themselves. Freedom of science, freedom worship, freedom of thought in general, are public institutions by which society opens to its members the opportunity for serving aims that are purposes by themselves. By establishing these freedoms, society constitutes itself as a community of people believing in the validity and power of things of the mind and in our obligation to these things.” Michael Polanyi, “Manageability of Social Tasks”, in: *The Logic of Liberty*, p. 193.

6
Michael Polanyi, “Perils of Inconsistency”, in: *The Logic of Liberty*, pp. 102–103.

The concept of freedom is worth examining in more detail. Polanyi distinguishes two opposite theories of freedom, and rejects them both by arguing in favour of his own conception. The first is the classical liberal concept of freedom. Everybody has a right to do anything he or she wants as long as he or she does not impede the same right of others. Polanyi claims that this conception is usually connected with utilitarianism, according to which the freedom of individuals is an important requirement of the greatest happiness of the society.⁷ The second one is a kind of simplified Kantian conception of freedom which says that freedom is a liberation from personal ends by obeying impersonal obligations. Polanyi argues, this idea of freedom could easily support totalitarian ideologies, if we add that the State, the Nation, or the Party is a trustee of the common good of society, therefore, it is the source of moral obligations which are compulsory for the individuals.⁸

In contrast to these theories, academic freedom can be characterized simply as “the right to choose one’s own problem of investigation, to conduct research free from any outside control, and to teach one’s subject in the light of one’s own opinions.”⁹ It is clear that Polanyi’s own conception of freedom is a middle course position between the individualistic and the obligation theory of freedom. Scientists as individuals must judge and make decisions independently, however, not separately from others. These judgements are about scientific merit, validity, plausibility of theories, academic appointments, and other things. On the other hand, these judgements, opinions, and decisions are guided by norms and values which are generally adopted by scientists.

Polanyi invokes some widely known examples of planned and controlled science in totalitarian states. The Lysenko-case is probably the best known story. During the 1930’s, the reliable theory of genetic heredity (“Mendelism”) was rejected in the Soviet Union for ideological reasons: genetics was declared as not consistent with Marxism-Leninism. Instead, as part of the official ideology, Michurin’s dubious and unsupported views were endorsed by Michurin’s follower, the chief ideologist Lysenko. His suspicious method of “vegetative hybridization” became wide-spread and obligatory. Critics, including the great geneticist Valilov were put to silence and dismissed. Vavilov himself was imprisoned and probably died in jail under unclarified circumstances.¹⁰

What makes Polanyi’s account interesting is that he identifies the implicit, theoretical presumptions of totalitarian ideologies, first of all, the denial of distinction between pure and applied science. As we have seen, Polanyi endorses pure science: the aim of science is seeking the truth for its own sake. Of course, Polanyi acknowledges the importance of applied science (engineering, medicine, etc.), but he argues that pure science does not need to serve practical (economic, social, political) interests and needs, since it is the scientists’ task and responsibility to choose their own problems, methods, and decide about scientific truth. Polanyi provides examples from the history of mechanics and the history of artificial lightning. He says that physics has its own problems and aims. Great scientists, like Copernicus, Kepler, Newton or Maxwell did not really care about the practical application of their theories, their sole aim was to give a deeper understanding of nature. On the other hand, technological development is about economical and practical needs: the inventors’ aim was to produce light cheaply and efficiently.¹¹

The Marxist ideologist Mitin’s words could not disagree more with Polanyi’s view:

“We have no gulf between theory and practice, we have no Chinese wall between scientific achievements and practical activity. Every genuine discovery, every genuine scientific achievement

is with us translated into practice (...) Soviet biologists, geneticists must understand dialectical and scientific materialism and learn to apply the dialectical method into their scientific work. Verbal, formal acceptance of dialectical materialism is not wanted.”¹²

It is worth taking into account that Polanyi’s diagnosis of the two totalitarian states, the Soviet Union and Nazi Germany, is connected to his views about the responses to scepticism and naturalism in modern philosophy. According to his narrative, at the initial period of totalitarianism (for instance, for Robespierre) traditional moral values are reinterpreted in a utilitarian scheme: violence and terror play an instrumental role for the sake of humanitarian objectives. Due to the instrumentalist-utilitarian conception of science, as well as other institutions, like jury, traditional values such as truth or justice are neglected or radically reinterpreted. Social institutions (such as, jury and scientific community) play a more and more submissive role. At the final stage of totalitarianism, the real aim of political authorities is not to surmount poverty and injustice by bringing humanity to a utopian world: they use violence for its own sake, and power becomes the ultimate goal.¹³

However, it is important to note that Polanyi clearly declares that coercion and violence in a certain degree are necessary for the functioning of every society. Even a democratic society must inevitably use its power and mastery in order to maintain law and order and protect citizens’ life and property.¹⁴ But the aim of a free society is to ensure conditions in which free individuals are able to recognize and pursue genuine moral and intellectual values. Therefore, contrary to the totalitarian state, enforcement of law plays a merely instrumental role. Scientific research depends on academic freedom, and academic freedom is an essential value of a free society.

3.

In this section I offer a summary of the main requirements of academic freedom. Some of Polanyi’s key concepts are: *self-coordination*, *mutual adjustment*, *tradition*, *scientific authority*, and *tacit judgements*. First of all, let us have a closer look at the notion of self-coordination. There are simple and

7
M. Polanyi, “Foundations of Academic Freedom”, pp. 32–33.

8
Ibid., p. 33.

9
Ibid.

10
Polanyi provides a detailed description of the Lysenko-case. See: M. Polanyi, “Self-Government of Science”, pp. 59–65.

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For his detailed argumentation in favour of the distinction see: Michael Polanyi, “Science and Welfare”, in: *The Logic of Liberty*, pp. 68–83.

12
Polanyi quotes Mitin. See: M. Polanyi, “Self-Government of Science”, p. 62.

13
Polanyi describes this process in terms of his conception of moral inversion. In “Beyond Nihilism” he writes: “Robespierre’s terror had justified itself by its noble aspirations; Marx refused such justification and left violence alone as the path of scientific Socialism. (...) This is moral inversion: a condition in which high moral purpose operates only as the hidden force of an openly declared inhumanity” See: Michael Polanyi, “Beyond Nihilism”, in: Marjorie Grene (ed.), *Knowing and Being. Essays by Michael Polanyi*, The University of Chicago Press, 1969, p. 16.

14
“Though men be harmoniously guided by their agreed convictions, they must yet form a government to enforce their purpose. Civic culture can flourish only thanks to physical coercion. It is sown in corruption.” Michael Polanyi, *Personal Knowledge. Towards a Post-Critical Philosophy*, London, Routledge & Kegan Paul Ltd., 1962, p. 238.

uniform tasks where every individual works on the same task in the same manner. Polanyi's two important examples are a group of women shelling peas and a team of chess players. Obviously, the total number of peas shelled or the number of games won will not be affected by the fact whether the individuals are isolated or not.¹⁵ However, there are tasks where a complete isolation of the individuals would inhibit progress and prevent the resolution of the task. Scientists might work totally separately from each other, and everybody might develop his or her own problem without relying on others, but in this case, without further information and feedback from others, no new problems would arise, and this would paralyse the progress of research within a short time.

Polanyi distinguishes between two kinds of coordination: *self-coordination* and *centrally directed coordination*. These abstract principles are manifested in many concrete systems. Self-coordination is a mutual adjustment of independent agents, when every individual pays attention and adjusts to others' operations within the same system. Every agent acts freely, following her own initiative, but in the sight of others, responding to other's operations. Every single modification of the system takes into account all other modifications.¹⁶

Let me illustrate this abstract theory by one of Polanyi's favourite examples, the solution of a jigsaw puzzle. What is the most efficient way to solve a very large and complex puzzle? Polanyi argues that even if we have a legion of puzzle-solvers, if they work separately on different pieces of the puzzle, the result would not be satisfying. If they were subordinated into a hierarchic body, where a central authority directed their actions, the initial cooperation between them would be paralysed. Their work will be most effective if they cooperate. Everybody works on putting the pieces of puzzle together in the sight of others, that is to say, every time a piece is fitted in, all the others will think about the next step in the light of others' advancement.¹⁷

Polanyi claims that self-coordination is guided by an invisible hand.¹⁸ There is no central direction, in other words, none of the steps taken are predetermined or known. Of course, central planning can be efficient in terms of some organizations, prominently the army. In this case a hierarchic organization could effectively coordinate individuals. However, in science and other tasks, such as puzzle-solving, central planning cannot work. The main reason why mutual self-coordination is more effective than central planning in terms of these tasks is that the end-result of the tasks is unknown. We might see the solving of a puzzle or a scientific problem as a series of decisions where nobody knows or expects what the final solution will be. Therefore, puzzle solvers and scientists can only make progress step by step, and each consecutive step must be decided locally by competent individuals who continually keep an eye on others' decisions.¹⁹

The most efficient way to make scientific progress is to let scientists work on their own problems and proceed following their own, independent decisions by adjusting not to external influences but to other scientists. Consequently, every attempt of central planning paralyses the advancement of science. Polanyi writes: "You can kill or mutilate the advance of science, you cannot shape it. For it can advance only by essentially unpredictable steps, pursuing problems of its own, and the practical benefits of these advances will be incidental and hence doubly unpredictable."²⁰

The free market is another obvious example of mutual adjustment. It is not hard to see how the invisible hand of self-coordination guides the producers

and consumers in the free market. The community of scientists is organized in a way which is similar to the social order of a free society. Their operations are based on economic principles which control the production and selling the goods in a free market.²¹ Polanyi utilizes Adam Smith's classical theory and argues that in science we can find the same economic principles, namely that the decisions of scientists must produce the highest "benefit" by using limited intellectual and material capacities. Scientists must make decisions about what problem is promising and worth for further investigation, and what is uninteresting or simply meaningless. Moreover, scientists judge other scientists' results and proposed conclusions, they evaluate papers, decide whether they should be published or not, and make decisions about appointments. Polanyi writes: "For his decisions are designed to produce the highest possible result by the use of limited stock of intellectual and material resources. The scientist fulfils this purpose by choosing a problem that is neither too hard nor too easy to him. (...) The line the scientist must choose turns out, therefore, to be that of greatest ego-involvement; it is the line of greatest excitement, sustaining the most intense attention and effort of thought."²²

These decisions are rooted in professional standards which have been adopted by scientists over generations. As we will see, Polanyi's main thesis is that these standards cannot be strictly formalized. In the following section we take a closer look at Polanyi's views about the values of scientific community.

4.

According to Polanyi, the second requirement of academic freedom and the proper functioning of science is that scientists submit themselves to obligations which become their guidance in seeking the truth. Polanyi mentions several professional standards which are obligatory for all scientists and necessary for judging scientific merit, and helping scientists to reject unscientific, dubious theories. The three chief values are *plausibility*, *scientific merit* (including: accuracy, systematic importance, intrinsic interest) and *originality*.²³

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Michael Polanyi, "The Republic of Science: Its Political and Economic Theory", in: M. Grene (ed.), *Knowing and Being. Essays by Michael Polanyi*, pp. 49–50.

16

See: M. Polanyi, "Foundations of Academic Freedom", pp. 34–36, and M. Polanyi, "The Republic of Science: Its Political and Economic Theory", pp. 49–53.

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M. Polanyi, "Foundations of Academic Freedom", pp. 34–36.

18

M. Polanyi, "The Republic of Science: Its Political and Economic Theory", p. 51.

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"(...) if the scientists of the world are viewed as a team setting out to explore the existing openings for discovery, it is assumed that their efforts will be efficiently co-ordinated if only each is left to follow his own inclinations." M. Polanyi, "Foundations of Academic Freedom", p. 34.

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M. Polanyi, "The Republic of Science: Its Political and Economic Theory", p. 59.

21

He writes: "I am suggesting, in fact, that the co-ordinating functions of the market are but a special case of co-ordination by mutual adjustment. In the case of science, adjustment takes place by taking note of the published results of other scientists; while in the case of the market, mutual adjustment is mediated by a system of prices broadcasting current exchange relations, which make supply meet demand." M. Polanyi, "The Republic of Science: Its Political and Economic Theory", p. 52.

22

Ibid., p. 52.

23

Ibid., pp. 53–54.

Like Kuhn, Polanyi also points out that the “internal tension” between conformity and originality is an indispensable element of scientific research. He writes:

“The professional standards of science must impose a framework of discipline and at the same time encourage rebellion against it. They must demand that, in order to be taken seriously, an investigation should largely conform to the currently predominant beliefs about nature of things, while allowing that in order to be original it may some extent go against these.”²⁴

According to Polanyi, scientists have a basically conservative institute. They are cautious about radical changes. Due to its traditionalism science could defend itself from frauds and daydreamers. On the other hand, scientists admire unexpected discoveries and ingenuity, even if the discovery has no significant systematic importance (for instance, the discovery of Neptune). Of course, their traditionalism could lead scientists to erroneous conclusions.²⁵ This is not a flawless system; nevertheless Polanyi insists that it is the best attainable.

As it is well known, Polanyi was a severe critic of the positivist view of science, according to which the criteria of truth and the methodology of justification are based on objective, universally valid, and, thus, impersonal rules. It is worth invoking some additional elements of Polanyi’s anti-positivist views of science. In contrast to positivists, he argues that there are no objective, definite rules of either justification or discovery. Scientists’ personal, tacit judgements are the only guide to scientific truth. Scientific research cannot be planned due to the fact that the rules of judging scientific merit cannot be fully and precisely formalized. If the justification of the claims of science are not based on impersonal, abstract methodological norms, rather on tacit rules formulated by the community of scientists, then knowledge cannot be without morality and rationality, and knowing has an essentially moral character.²⁶

It is clear what is at stake in this debate. Successful planning is possible in the cases of tasks which can be strictly formalized. If the advancement of science as well as rejecting and accepting scientific claims are not guided by impersonal, “objective” and precisely definable theoretical principles, but depends on personal, tacit, elusive and unpredictable judgements, then centrally directing science is impossible. Polanyi summarizes these points in “The Republic of Science” as follows:

“(…) the methods of scientific inquiry cannot be explicitly formulated and hence can be transmitted only in the same way as an art, by the affiliation of apprentices to a master. The authority of science is essentially traditional.”²⁷

The standards of science mark the framework of scientific research (i.e. search for truth). At the same time, scientists are inspired to break these rules by finding some new, original and unexpected aspects of reality. Polanyi summarizes the logical connections between epistemological and moral values in the following way:

“The general foundations of coherence and freedom in society may be regarded as secure to the extent to which men uphold their belief in the reality of truth, justice, charity, and tolerance, and accept dedication to the service of these realities. (...) The study of academic freedom which we have pursued may serve what is the decisive point in the issue of liberty. It consists in certain metaphysical assumptions without which freedom is logically untenable, and without the firm profession of which freedom can be upheld only in a state of suspended logic, which threatens to collapse at any moment and which in these searching and revolutionary times cannot fail to collapse before long.”²⁸

Standards of scientific evaluation have another important function, namely establishing a coherent scientific opinion. Uniformity of scientific standards and the common beliefs about “the nature of things” provide the third condition of free science. Without uniform standards the comparison between the value of discoveries in different fields (such as botany and theoretical physics) would be impossible. Additionally, if science was separated by rival schools of thought, the scientific authority which establishes its public respect would be ceased.²⁹

Some further questions must be answered. Every scientist has competence in only a very small part of scientific knowledge. How can a group of specialists form a coherent scientific opinion and make consistent judgements about such diverse topics of scientific inquiry? We have seen that the main organizational principle of free science is the self-coordination of individuals by mutual adjustment. Polanyi emphasizes the importance of another feature of science, namely that there are overlapping areas of scientists’ special fields. Although every scientist can judge competently only a small part of science, they can make judgements in fields which are connected with their special research area. Every scientist is a member of a group with overlapping competences, thus the whole of science is covered by the network of experts. The links between specialists establish the coherence of scientific opinion.³⁰

The authority of scientific opinion is mutual. He says, the authority “is established *between* scientists, not above them.”³¹ Moreover, scientists exercise authority over the lay public:

“Only the discipline imposed by an effective scientific opinion can prevent the adulteration of science by cranks and dabblers. (...) Moreover, only a strong and united scientific opinion

²⁴
Ibid., p. 54.

²⁵
Polanyi invokes the rejection of his own theory about adsorption which later turned out to be true. He adds: “I did not complain about this mistaken exercise of authority.” See: Michael Polanyi, “The Growth of Science in Society”, in: M. Grene (ed.), *Knowing and Being. Essays by Michael Polanyi*, p. 78.

²⁶
In his main work, *Personal Knowledge* as well as in other essays, such as “The Unaccountable Element in Science” he argues very thoroughly in favour of these claims. He examines and criticizes the positivist account of scientific reasoning and justification as well as the limits of using mathematical formulations of scientific problems. To sum up, he identifies five areas of scientific knowledge in which indeterminacies play role. (1) the indeterminacy of empirical knowledge in its bearing on reality (2) the unspecifiability of rules for establishing true, as distinct from illusory, coherence (3) the indeterminacy of the grounds on which a belief is considered knowledge (4) the unspecifiability of the process of tacit integration by which knowledge is acquired (5) the unspecifiability of the existential changes involved in modifying the grounds of scientific judgements. See: Michael Polanyi, “The

Unaccountable Element in Science”, in: M. Grene (ed.), *Knowing and Being. Essays by Michael Polanyi*, p. 120.

²⁷
M. Polanyi, “The Republic of Science: Its Political and Economic Theory”, p. 66.

²⁸
M. Polanyi, “Foundations of Academic Freedom”, pp. 47–48.

²⁹
Ibid., p. 42.

³⁰
“Indeed, through these overlapping neighbourhoods uniform standards of scientific merit will prevail over the entire range of science, all the way from astronomy to medicine. (...) Scientific opinion is an opinion not held by any single human mind, but one which, split into thousands of fragments, is held by a multitude of individuals, each of whom endorses the others’ opinion at second hand, by relying on the consensual chains which link him to all the others through a sequence of overlapping neighbourhoods.” M. Polanyi, “The Republic of Science: Its Political and Economic Theory”, p. 56.

³¹
Ibid., p. 56.

imposing the intrinsic value of scientific progress on society at large can elicit the support of scientific inquiry by the general public.”³²

An additional requirement of academic freedom is the freedom of academic appointments. Unsurprisingly, Polanyi advocates a complete freedom of scientists in terms of deciding on appointments at universities, academies, and other research institutions. Perhaps his idea of life-long, permanent appointment of professors seems old-fashioned now, but he maintains that this is an essential institutional safeguard of academic freedom. It is clear that appointment for life (or until retirement) provides a privileged degree of independence.³³ In conformity with his views about traditional institutions, his analogy is the appointments to the judiciary. He maintains that even though judges are appointed and paid by the state (or in Britain, the Monarch), it does not affect their independence as long as the state respects their freedom.³⁴

5.

The ideological reasons against academic freedom have strong connections with profound epistemological questions as well. As we have seen, Polanyi states that the aim of science is to seek the truth, which is one of the most important (or the most important) value of mankind. In order to fulfil their goal, scientists must work in an autonomous, independent community and be free from political or even economic interests. It is not hard to see how his ideas are based on his commitment to the view that science provides efficient means for understanding reality. He interprets totalitarian ideologies as implicit or explicit denials of (scientific) truth. It could seem surprising, since Nazism and Communism both declared that they had a firm “scientific” basis.

Let us see an example of how totalitarian ideologies determine the role and nature of scientific truth. Polanyi quotes Himmler’s views about investigations into German pre-history.

“We don’t care a hoot whether this or something else was the real truth about the pre-history of the German tribes. (...) there’s no earthly reason why the party should not lay down a particular hypothesis as the starting point, even if it runs counter to current scientific opinion. The one and only thing that matters to us (...) is to have ideas of history that strengthen our people in their necessary national pride.”³⁵

This passage makes clear what drastic consequences could be expected if we denied scientists’ right to decide what scientific truth is. Polanyi argues that denying academic freedom goes hand in hand with denying scientific truth: if the scientists do not tell what is true, then someone else will do that, for example, political authorities.³⁶ According to Polanyi’s anti-positivist epistemology, the free cooperation of scientists who hold the same beliefs and follow the same standards is the only possible way to gain scientific knowledge about reality.

Moreover, as we have seen, denying the distinction between pure and applied science relies on a utilitarian theory of values, which from Polanyi’s point of view is equal to denying objective moral values altogether. In “Science and Welfare” he makes this relation clear:

“The new radically utilitarian valuation of science rests on a consistent philosophical background, borrowed mainly from Marxism. It denies that pure science, as distinct from applied or technical science, can exist at all. Such a revaluation of science necessarily leads to a demand for the Planning of Science. If science is to serve the practical needs of society it must be properly organized for this purpose. You cannot expect individual scientists, each pursuing their particular

interests, to develop science effectively towards the satisfaction of existing practical needs. You must see to it therefore that scientists are placed under the guidance of authorities who know the needs of society and are generally responsible for safe-guarding the public interest.”³⁷

All in all, Polanyi’s argumentation against totalitarian control of science has two aspects, a practical and a deeper, logical one. First, planned science does not work, controlling science paralyses scientific development. Advancement of science is possible only if scientists, self-coordinated by their own free choices, make judgements about the scientific merits of theories and hypotheses. These standards of science are rooted in tradition, and individuals’ voluntary submission to it. Like the traditional rules and values of other great intellectual systems, such as the judiciary, the individuals’ decisions are never predetermined, as every new decision changes and forms the tradition.

Secondly, rejecting academic freedom is theoretically problematic: it is a self-defeating position. For if we reject academic freedom, then ideologists or politicians, not scientists, will decide what problems are worthy of investigation and what is supposed to be the result of investigation. Since truth-seeking relies on tacit, intuitive judgements of free explorers, rejecting academic freedom blocks the way to truth. As we have seen, according to Polanyi’s theory of knowledge, understanding nature is possible only on the basis of tradition and the self-coordination of free intellectuals. Denying academic freedom is equal to denying that the main goal of science is seeking the truth by means of the self-coordination of scientists. Therefore, rejecting academic freedom might lead to rejecting the truth itself, and it will destroy the theoretical basis of totalitarian ideologies which declare the falsity of their rival ideologies. If true was nothing more than what serves the Party’s or (supposedly) the public’s interest, then it would mean that there is no real truth and falsity.³⁸

6.

In the final section I consider some objections against Polanyi’s views. I argue that some of these objections are fair and raise real difficulties against

32

Ibid., pp. 57–58.

33

M. Polanyi, “Foundations of Academic Freedom”, p. 43. The eminent examples are Oxford and Cambridge.

34

Ibid., p. 41.

35

See: M. Polanyi, “Self-Government of Science”, p. 59.

36

“For if truth is not real and absolute, then it may seem proper that public authorities should decide what should be called the truth.” M. Polanyi, “Foundations of Academic Freedom”, p. 47.

37

M. Polanyi, “Science and Welfare”, p. 69.

38

Polanyi calls the Hungarian Revolution in October 1956 a battle for the truth itself. To-

tal and radical denying of truth became unsustainable in 1956. He quotes the Hungarian Communist, Miklós Gimes’ edifying words to illuminate radical totalitarian thought as well as the transformation from a totalitarian viewpoint into normal mentality. Gimes says: “Slowly we had come to believe (...) that there are two kinds of truth, that the truth of the Party and the people can be different and can be more important than the objective truth and that truth and political expediency are in fact identical (...) And so we arrived at the outlook (...) which poisoned our whole public life, penetrated the remotest corners of our thinking, obscured our vision, paralysed our critical faculties and finally rendered many of us incapable of simply sensing or apprehending truth. This is how it was, it is no use denying it.” Michael Polanyi, “The Message of the Hungarian Revolution”, in: M. Grene (ed.), *Knowing and Being. Essays by Michael Polanyi*, p. 29.

Polanyi's more or less idealistic ideas about academic freedom. Nevertheless, these objections fail to show that Polanyi anti-positivist and anti-totalitarian views are unsupported. They rather demonstrate that we should mitigate Polanyi's views and uphold a more balanced position.

The first obvious objection is that in the Soviet Union planned science was actually successful. Soviet science and engineering were high-ranking and could compete with "Western science" at length. Polanyi himself deals with this objection.³⁹ Unsurprisingly, in his reply he emphasizes that detailed research plans for each laboratory or university remained on paper only. Even though there were serious political-ideological interventions into academic freedom in terms of psychology and genetics, as well as in terms of social sciences, most Soviet mathematicians, physicists, chemists followed the same standards of scientific research as their Western colleagues. According to Polanyi, this is the main reason why several areas of pure science managed to make progress even during the darkest times of totalitarianism.⁴⁰

Polanyi's reply is coherent with his other views, however, it seems that he just reformulates his views. A defender of planned science might easily reply that the success of some areas of science in the Soviet Union clearly demonstrates that there is nothing wrong with centrally directed science. Moreover, if scientists' academic freedom could remain even in totalitarian states, then it is unclear what is the whole point of Polanyi's criticism of totalitarianism.

Another, perhaps more forceful objection calls attention to the fact that "absolute" freedom and independence have never existed in science, and they are not even worth to aim for.⁴¹ Polanyi defines academic freedom as scientists' freedom to decide their own problems of inquiry. As he argues, not allowing them to do so would be an unacceptable external influence on science. However, it is not hard to see why total freedom in selecting problems and methods would be very dangerous, if it means that neither the state nor anyone else has supervision over scientists. Though we can admit that the goal of pure science is to seek the truth and gain a deeper knowledge about the nature of reality, it is clear that there must be other, sometimes more important aspects of scientific inquiry, namely moral values. There are several morally objectionable scientific experiments or even areas of inquiry. A number of controversial psychological experiments can be mentioned for example: the Milgram-experiment, the Stanford prison experiment. Studies made on twins who were separated at birth have certainly enlarged our knowledge about how we are shaped by genes and how much by the environment, nevertheless it is hard to defend that this mode of inquiry was worth for "scientific truth". Experimenting on animals and stem-cell research are further obvious examples.

It is safe to say that Polanyi's arguments manage to demonstrate that his conception about academic freedom is better than totalitarian science. Nonetheless, these arguments fail to justify that free science in a Polanyian sense is the best possible option. Elitism and "absolute" freedom can be dangerous. Though it is not right when political authorities or profit-oriented companies decide about scientific truth or academic appointments, a public control concerning research projects and examined problems is needed. Moreover, Polanyi admits that pure science must be funded by the state. He has an optimistic view of a good King who just supports independent institutions, but does not want to intervene or influence their work. Of course, this view sounds idealistic. Apart from this problem, since according to Polanyi science should be a state-funded institution, his analogy with free market capitalism can be challenged. It is also worth noting that free market establishes consumer so-

ciety in which people's desires are manipulated and they don't always want what they really need. That is to say, free market could be flourished even though its advancement might rely on manipulation and delusion, rather than seeking the truth. Consequently, Polanyi must admit that there are crucial differences between two kinds of self-coordinated systems, namely free-market and scientific research.

Furthermore, as regard to his elitism, Polanyi's epistemological views have been criticized in many respects. I refer to some objections offered by Lakatos who criticized Polanyi and other conservative thinkers (such as Toulmin or Oakeshott) by claiming that their epistemology has an authoritarian and undemocratic flavour. Here I am able to offer only a short summary of these objections.

As we have seen, an elitist like Polanyi would interpret the victory of Lysenko over the Mendelians in terms of destroying the norms of the scientific community. However, Lakatos argues that these norms of the community do not guarantee scientific progress, i.e. reaching a more and more comprehensive understanding of nature. Consensus among the scientists and scientific degeneration can prevail at the same time.⁴²

Lakatos states that if the decisions of a privileged elite are the criteria of scientific truth, that is to say, the scientists judge themselves, and laymen must not judge the scientific elite, then it can have dangerous consequences. If there are no explicit criteria of distinguishing between pseudo-science and real science, or between progressive research projects and degenerative ones, then scientific opinion would be nothing else than the prevailing opinion of a community. According to Lakatos, this is an authoritarian view, since it says truth is what the majority accepts as true. Even though Polanyi insists that there is scientific progress, Lakatos argues, he fails to show how real scientific progress could be achieved, if ultimately we have nothing else than the scientists' inexplicable intuitive judgements to rely on. There are changes in the opinions of the community, but how can we know that whether this is a real progress?⁴³ Lakatos draws the conclusion: we should separate the sociology and history of science from the rational reconstruction of science.

Nevertheless, I believe we have good reasons to think that Polanyi's criticism of the ideological-philosophical foundations of totalitarianism has valuable points. He rightly points out that denying academic freedom relies upon a kind of pragmatist view of science and an instrumentalist interpretation of

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M. Polanyi, "Science and Welfare", pp. 83–85.

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He points out that there were attempts by Soviet scientists to challenge the Marxist interpretation of science. He invokes academician Kapitza's speech to the Soviet Academy in 1943. He argued Academy should be devoted to "great science". This is another name of pure science which Polanyi has in his mind. Kapitza said: "(...) it is not right to insist that a scientist should seek the application of his scientific work to industry (...) a scientific institute should have a very flexible organization. Indeed, in the course of creative work it is difficult to look even one month ahead, let alone a year." *Ibid.*, p. 84.

41

I am very grateful to Professor William Sweet for these comments.

42

Imre Lakatos, "The Problem of Appraising Scientific Theories", in: John Worall & Gregory Currie (eds.), *Imre Lakatos: Mathematics, science and epistemology. Philosophical Papers, Volume II*, Cambridge University Press, 1997, pp. 112–117.

43

Imre Lakatos, "Understanding Toulmin", in: J. Worall & G. Currie (eds.), *Imre Lakatos: Mathematics, science and epistemology. Philosophical Papers, Volume II*, pp. 227–228.

moral values. It is also worth considering Polanyi's arguments for the claim that the instrumentalist idea is a form of moral nihilism which denies the reality of moral values, including the values of pure science, and this principle is one of the essential components of the ideologies of totalitarian states in the twentieth century. He states rightly that we cannot properly understand twentieth century totalitarianism unless we closely examine the philosophical tendencies which led to false and distorted views about morality and knowledge. In my view, his insights are usually overlooked in current philosophical discussions about totalitarianism.

It is worth mentioning another important question which is related to discussions about the role of philosophy in our society. Polanyi warns that though we live in a democratic society, the idea of pure science might be put at risk if profit seeking becomes the ultimate value. His conception of academic freedom in terms of pure science might have some lessons for researches in humanities and social sciences as well. For it is also a wide-spread opinion that arts and humanities (prominently philosophy) can hardly contribute to economic growth or the public welfare of society. Philosophy is often considered as unnecessary, since it is unclear whether it has practical benefits. Of course, this opinion has serious and dubious philosophical presumptions. The main lesson could be drawn from all these points is that the role of science as well as philosophy must be reconsidered in our free societies as well.

Péter Hartl

Michael Polanyi o slobodi znanosti

Sažetak

U ovome radu istražujem Polanyijeve glavne argumente za akademsku slobodu. Akademski i politička sloboda međusobno su blisko povezane: ako država preuzme kontrolu nad znanošću, to dovodi do kolapsa same slobode u cijelome društvu. Njegovi argumenti protiv totalitarizma oslanjaju se na njegovu anti-pozitivističku filozofiju znanosti. On definira totalitarizam kao poricanje akademske slobode koje se temelji na pragmatičkom poimanju znanosti i instrumentalističkim interpretacijama moralnih vrijednosti. Polanyijeva ideja znanosti je duhovni, idealistički opis zajednice slobodnih intelektualaca koji su strastveno posvećeni potrazi za istinom i imaju autonomnu zajednicu s vlastitim pravilima i autonomnim upravljanjem. Potraga za istinom radi nje same je bitan cilj znanosti, koji se može postići jedino ako znanost ostane slobodna od političkih, ideoloških i ekonomskih utjecaja. Tvrdim da Polanyijevi uvidi mogu biti relevantni i danas, kada znanost može postati instrument profitno orijentiranih praktičnih potreba umjesto potrage za istinom samom i kada se humanistika (uključujući filozofiju) često smatra nepotrebnom.

Ključne riječi

akademska sloboda, Michael Polanyi, čista znanost, znanstveni autoritet, samoupravljanje, prešutne prosudbe, totalitarizam, tradicija, istina

Péter Hartl

Michael Polanyi über die Wissenschaftsfreiheit

Zusammenfassung

Im präsenten Artikel gehe ich Polanyis Hauptargumentation für akademische Freiheit auf den Grund. Die akademische und politische Freiheit sind miteinander nahe verwandt: Unterzieht der Staat die Wissenschaft seiner Kontrolle, endet dies im Kollaps der Freiheit selbst in der gesamten Gesellschaft. Polanyis Begründung gegen den Totalitarismus stützt sich auf dessen antipositivistische Philosophie der Wissenschaft. Er diagnostiziert den Totalitarismus als Versagung der akademischen Freiheit, die auf dem pragmatischen Blickpunkt der Wissenschaft als auch der instrumentalistischen Interpretation der Moralwerte basiert. Polanyis Wissenschaftsvorstellung ist eine spirituelle, idealistische Schilderung einer Gemeinschaft freier Intellektueller, die sich der Suche nach Wahrheit glutvoll gewogen zeigt und über eine autonome Community mit eigenen Regeln sowie autonomer Verwaltung verfügt. Die Erkundung der Wahrheit um ihrer selbst willen repräsentiert das essenzielle Vorhaben der Wissenschaft, welches sich allein unter Bewahrung ihrer Independenz von politischen, ideologischen bzw. wirtschaftlichen Einflüssen zuwege bringen lässt. Ich halte dafür, Polanyis Einblicke hätten auch heutzutage Relevanzpotenzial, zu der Zeit, wenn sich die Wissenschaft auf ein Werkzeug des profitorientierten praktischen Begehrens reduzieren könnte, anstatt nach der Wahrheit selbst zu fahnden, und die Geisteswissenschaften (Philosophie inbegriffen) gehäuft als entbehrlich abgestempelt werden.

Schlüsselwörter

akademische Freiheit, Michael Polanyi, reine Wissenschaft, wissenschaftliche Autorität, Selbstkoordination, stillschweigende Urteile, Totalitarismus, Tradition, Wahrheit

Péter Hartl

Michael Polanyi sur la liberté de la science

Résumé

Dans cet essai, j'examine les principaux arguments de Polany pour la liberté académique. La liberté académique et politique sont étroitement liées : si l'Etat prend le contrôle de la science, cela conduira à l'effondrement de la liberté elle-même dans toute la société. Ses arguments contre le totalitarisme reposent sur sa philosophie anti-positiviste de la science. Il diagnostique le totalitarisme comme un refus de la liberté académique fondé sur une conception pragmatique de la science et une interprétation instrumentaliste des valeurs morales. L'idée de la science de Polany est une description spirituelle, idéaliste, d'une communauté d'intellectuels libres, passionnément dédiés à la recherche de la vérité, et qui ont une communauté avec ses propres règles et une direction autonome. La recherche de la vérité pour elle-même est l'objectif essentiel de la science, ce qui peut être accompli uniquement si elle demeure libre des influences politiques, idéologiques et économiques. J'affirme que les visions de Polany peuvent toujours être pertinentes aujourd'hui, alors que la science peut devenir un instrument des besoins pratiques orientés vers le profit au lieu de chercher la vérité elle-même, et alors que les sciences humaines (y compris la philosophie) sont souvent considérées comme inutiles.

Mots-clés

liberté académique, Michael Polanyi, science pure, autorité scientifique, auto-coordination, jugements tacites, totalitarisme, tradition, vérité