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Book Review
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PROBLEMATIC OPEN SCIENCE

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In 2022, the international publishing house Springer published the book *Open Science: the Very Idea*[1] (ISBN: 978-94-024-2114-9, https://doi.org/10.1007/978-94-024-2115-6). The author is Frank Miadema, Full Professor at UMC Utrecht. He is a Dutch biochemist and immunologist. The book was published under license Creative Commons CC-BY, it has 265 pages and is written in English. It consists of eight chapters, preceded by a Preface, tips for the readers, a Synopsis (brief summary of the contents of the chapters) and Acknowledgements. The author includes the Supplements after the last chapter. The chapters themselves include tables through which the author shares his experiences and examples from his scientific life.

In fact, this is a book about the project 'Science in Transition', but this project, as we can see on the site[2], has not been active since 2018. In this sense, the reviewed book has a historic character. In 2023, we can say that this project failed, and that Miadema's plan did not work. "Indicator mania", the ideology of "pointosis" ("scoreosis") and "grantosis" are fine. F. Miadema is not the only one who drew attention to the pathology of the current science system – Morgan Meyer spoke about that in Luxembourg, Michał Kokowski spoke about it in Poland, and Jurjo Torres Santomé spoke about it in Spain. Miadema's book is an aftermath of a failed bottom-up attempt to change the scientific system, this time in the Netherlands.

This book contains a lot of important proposals, but they look inconsistent and editorially disordered. One of the problems is the lack of an adequate number of paragraphs – often, the text is written in one line and it is hard to read. The structure of the text is disproportionate: the author mixes theoretical issues with summaries of the history of the philosophy of science, descriptions of his life experiences, comments aimed at promoting his concept "Science in Transition" and the critical analysis of the current financial model of science from many points of view. Therefore, the narration becomes chaotic. In addition, the book includes a lot of quotes which should be shortened. The photos, links and other additions to the text make the book appear not as a scientific monograph, but a collage.

F. Miadema wants to question the image of science and the "legendary narration" about science which is promoted by the scientist. He has been looking for an

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[1] Frank Miadema, "Open Science: the Very Idea", Springer, 2022, p. 265.

[2] https://scienceintransition.nl/.

answer to the question of how science really works and produces knowledge. He wrote that "scientists have a moral obligation to engage with the major societal problems and challenges of their time" (p. viii), and he sees the idea of open science as a possibility for a change in this image. Open science is one of the element of the open society (like in Popper's conception), and it should therefore be merged with the democratic political system. In the reviewed book, he shares his experiences in the field of the social role of science. He marks off four important points: the general concise view of science and society since 1945, the relationship between philosophy and sociology, and the critique of science, perspectives and transition to Open Science.

Unfortunately, this book lacks concrete solutions to the presented problem. F. Miadema does not give a ready recipe for the evaluation of the work of scientists, or for how we can remove "pointosis" and "grantosis". The recommendations in the Supplement ('The Metric Tide') are only general guidelines. Therefore, it is sometimes hard to select important conclusions from the reviewed book . In this review, I tried to describe the most interesting fragments.

F. Miadema shows that science is influenced by political trends. Governments set the agenda for research, but scientists feel that science does not fulfil the promise of increasing life quality. This is a source of frustration for scientists. In his opinion, ideologies, as a uniqueness of science compared to any other societal activity, the ethical superiority of science, the vocational disinterested search for truth, autonomy, and moral and political neutrality, the dominance of internal epistemic values and the unpredictability of the results were accepted too mindlessly. He recognises the problem of too few interactions between science and society during agenda-setting and the actual process of knowledge production. The internal reward system steering academic careers is focused on positions on international ranking lists. This incentive and reward system drives a hyper-competitive social game in academia, which results in a widely felt lack of alignment and little shared value in the academic community. Finally, it insulates academies and science from society, and distorts the research agenda, and the societal and economic impact of science.

In the first chapter, F. Miadema thinks about the development phases after 1945. He focuses on selected internal aspects of USA politics. He describes the changes in the way of thinking of and understanding science. He summarises the opinions about the role of science and discussion in the 1960s (Michael Polanyi, John Maddox, Stephen Toulmin, Alvin Weinberg). He formulates several critical postulates, for example: science, "to be effective must be much more mission-oriented, inclusive, truly multidisciplinary" (p. 4).

In his opinion, academic research should aim to have an effect in the real world. He thinks that social sciences and humanities have to engage in social concerns, and that science should be defended against populism and nationalism. He recognises the lack of a simple translation between science and social effects. His thesis that „A paper in Nature does not cure patients" (p. 4) is brilliant. He writes that the relations and interactions between science and society are not clear. The problem lies in science agenda-setting, and in the dangers of the possibility of abuse of science via the immense powers of multinationals in our deregulated neoliberal economies. He sees the problem of free scholarships and research in non-democratic countries too.

He says that ideas and concepts about science and research are based on the achievements of philosophy and sociology before the Second World War. They form myths and ideology about science for the scientific community, and still determine the popular view of science. Therefore, young researchers are not taught

what truth is and how they can discover it, but they are taught the technical site of research. They think that they automatically create the truth in this way. In addition, people believe in the difference between natural science („hard sciences") and the social sciences and humanities ("soft sciences"), and in the higher value of quantitative analyses over qualitative analyses.

The second chapter is a summary of the philosophy of science. The author describes the ideas of Popper and Merton, and puts forth a thesis that their vision of science does not exist in practice. He especially emphasises the contribution of John Dewey, Thomas Kuhn, Helen Logino, Charles Sanders Peirce, Hilary Putnam, Jerom Ravetz (from the Marxist perspective), Willard Van Orman Quine, Steven Shapin and John Ziman. He evokes the five thesis of Mary Hesse, which revolve around the differences between natural and human science in terms of experiences, theories, law-like relations, language and meanings. This old discussion, and Habermas' conception, took place in a very different public context. Cartesianism, foundationalism, analytic philosophy, positivism, popperism and the Wiener Kreis do not give an answer to the question of how science is really done.

This discussion is not oversaturated with algebra, as is the case in Adam Grobler's work (*Pl. Metodologia nauki*), and it is not too superficial like popular studies on the history of philosophy, but it is detailed enough to meet the needs of the reader. He does not express it directly, but his book is the critical review of positivism, a praise of pragmatism and an omission of postmodernism. He regularly uses the keyword 'legend', but he does not explain exactly what he means by it. Only on page 62 does the reader learn that the 'legend' is the positivist's ideal of the scientific method. In Polish literature, it was clearly described by Stanisław Kamiński (*Pl. Nauka i metoda. Pojęcie nauki i klasyfikacja nauk*).

In the third chapter, F. Miadema describes the idea of 'Science in Transition'. It was a Dutch citizen's initiative (movement) in which he was involved. He and his colleagues tried to create a new model of scientific management. He describes the long discussions in scientific institutions, the inability to change the system, the creation of a project group, and the organised meetings and workshops. Additionally, he portrays his associates.

In this book, F. Miadema alternates his life experiences and his criticism of bibliometric indicators. Rather than to improve the quality of the technical side of the scientific workshop, as they were originally conceived in bibliometrics, these indicators are used as a tool for the decision-making process of allocating financial resources for research. He describes – with reference to Bourdieu – the negative effects of indicators for scientists as a social group. At the same time, he criticizes the grant system, which has no sense from the perspective of long-term, forward-looking research. He blames the New Public Management and the economisation of science for the bibliometric character of contemporary science. He devotes a lot of space to a discussion of: the negative impact of bibliometrics and research evaluation methods for researcher behaviour; research agenda-setting; the depreciation of local and regional research important for local communities; progress on research careers; and the managing of universities. To replace the indicators, he suggests ten principles from the "Leiden Manifesto", among which is, for example, the development of the regional studies.

The science policy, based on 'pointosis' and 'grantosis', determines which research is done and which research is not done. F. Miadema draws attention to the "knowledge that never was" (p. 110). This is a crushing argument, and he brings

to light how much knowledge we, as humanity, have lost because certain research was not undertaken at all as a result of science policy determinants. Grants and points make it so that researchers not only fail to finish their research but also never manage to undertake it (because, for example, their publication exceeds the limit of the characters imposed by highly scored journals, or the research effects cannot be described in the editorial template). The science system structures thinking and, thus, restricts freedom.

Looking for a doctrine that could help him break the system, the author of the reviewed book turns to pragmatism. Therefore, in the fourth chapter, he quotes John Dewey, Hilary Putnam, Richard Rorty and Philip Kitchner.

In the fifth chapter, he again refers to the history of the philosophy of science, especially new pragmatism. He was not afraid to speak about the 'production of knowledge'. He emphasises the social responsibility of science. On the other hand, he stresses the independence of science from society, because people do not always use common sense. He refers to his own research on HIV and recalls Bruno Latour's *Laboratory Life*.

He uses the achievements of other researchers to highlight criticisms of the science system, and raise questions about the incentive and reward system. In his opinion, scientists are afraid to openly confess to their fallibility and limitations, and are anxious of external influences and criticism. They do not find themselves in a multitude of non-synchronous interactions between various bureaucratic institutions. Science co-evolves with society, but science is more heterogeneous, diverse, local and disunited than society thinks. In my opinion, two conclusions can be drawn from this chapter: that 'knowledge economy' is utopia, and that the changing priorities of governmental science policy limit the developmental possibility of the school of thought.

In the sixth chapter, F. Miadema shares his experiences of working at University Medical Centre Utrecht, especially in the field of fundraising, collaboration between divisions, setting research programmes, creating rewards and the research evaluation system. Research programmes should better respond to societal needs with regard to public health, prevention, and clinical care.

He expresses the opinion that the "the reputational reward system is most likely the most critical process in academia" (p. 180) in the seventh chapter. F. Miadema writes that the reward system determines "almost every relevant aspect of scientific research" (*Ibid.*). In this context, he describes the progressive process of the implementation of Open Science, especially in the European Union. In the late 90s, it was conditioned by the rising cost of subscriptions to scientific journals. This situation lead to a vicious circle: 'better' journals dropping subscriptions of the 'lesser' journal, and a smaller number of journals causing a higher demand for 'better' journals because researchers were addicted to them, so the international publishing corporations set higher subscription prizes. Libraries stopped the subscriptions and, finally, Open Access journals appeared on the publishing market. They are free to read, but they ask authors to pay for the processing costs of the article. The best choice is gold – open access without article processing charges.

Naturally, this view is simplified, because the situation for scientific journals in post-communist European countries, especially in Poland, was different. They needed to be visible and accessible for authors and readers. However, they were financed by public scientific institutions and universities, so they never charged authors. I saw another problem as well – the mentality of the conservative professorship. For them,

the free availability of scientific texts raises concerns about the fear of the theft of their achievements: if anyone can read, then anyone can appropriate. In 2023, this can seem strange, but it was a really common problem 20 years ago.

For F. Miadema, Open Science is the next step, following open data and open access. He describes attempts to change the evaluating criteria for scientific entities, and promotes the Open Science idea and his own experiences. He correctly writes that, from the economic perspective, research and innovation are the main drivers of economic growth and job creation, but that social sciences and humanities are important too, because they meet social needs and values, and reach beyond classical technocratic scientism (p. 207).

In the eighth chapter, which is the epilogue of the book, the author stresses the role of the European Union, the importance of the relationship between Open Science and democracy, and, furthermore, the importance of the relationship among science, scientists and society. He laments China's policy of closing itself off to the exchange of scientific knowledge. In his opinion, the COVID-19 pandemic influenced the opening of research, but he recognizes the threats to science posed by social media and the polarisation of society. He mentiones the lack of trust in science in connection with vaccinations (anti-vaccination movement and Donald Trump). The sentence: "The time is long gone that the claims and views of science and experts were automatically accepted because of mythical «God given» authority or a «unique scientific method»" (p. 218) is the best recapitulation of the reviewed book.