OPEN SCIENCE AS A CHALLENGE FOR THE TRANSFORMATION OF SCIENCE AND HIGHER EDUCATION: SELF-ORGANIZATION AND RE-INSTITUTIONALIZATION

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Introduction

Since October 2022, when the Ukrainian government approved the National Plan regarding Open Science – as "another step on the path of Ukraine's integration into the European Research Area" (Ukraine has joined the EU countries... 2022), the topic of Open Science remains in our country one of the most popular and urgent of the ways of transforming science (and even all the academic research and higher education activities in general). However, if we look at the contents of the aforementioned "National Plan", we can see that the planned individual measures relate mostly to the implementation of open access to scientific publications and scientific information, open access to research infrastructure, and the creation of conditions for the successful management of information and research infrastructure. And that's too narrow a vision of Open Science! Besides, even such a limited approach leads to questioning the transformation towards Open Science as a way of trying to organize science and academic activity in some external and administrative way, which is clearly opposed not only to the democratization of science but to the very core values of Open Science itself. And that makes it necessary to consider Open Science from the perspective of self-organization.

Methodology

The paper employs methods of analysis, comparison, philosophical comprehension, and dialectics in order to consider the phenomena of openness and self-organization of science and its status in today's world.

Results

In my opinion, Open Science is a complex multi-layered phenomenon that can be shown to have three levels in it. The first level, the most obvious and applied one, consists of guidelines related to procedures, practices, and behavior, including, but not limited to, Open Access: that is historically the first and the most well-known aspect of Open Science. The second level can

be described as methodological and organizational: it consists primarily of infrastructure, technologies, and services, with Open Science appearing under this perspective as a platform for ensuring international and interdisciplinary cooperation of academics. Finally, the third level corresponds to the deepest theoretical and value foundations, even social ideals (Mielkov 2021). Open Science is actually aimed at achieving not just open access to academic publications, but *social re-institutionalization* of science as well – as a response to the crisis of science in today's society. Open Science is even considered to be a kind of "citizen's science" that brings research and society closer together. And the way to achieve this goal is said to be, in particular, a radical change in the way society evaluates, rewards, and stimulates academic activity, by getting rid of the emphasis on publications, their numbers, and their impact factor, while searching for alternative ways of evaluating academic activity and achieving wider dissemination of academic research results in society (Mielkov 2023).

In fact, just as the values of Open Science are actually based on the Mertonian principles of the ethos of science (with 'openness' directly corresponding to both *universalism* and *communism*), social re-institutionalization of science could be traced to the classical unity of science and democracy, to the ideal and the reality of *République des Lettres*. That reality gradually faded after in the 19th and 20th centuries centralized nation states took their administrative control over the sphere of education and especially higher education: science became a sphere of organization rather than self-organization. It could be argued that such an approach was quite effective during the age of Modernity when both higher education and science were changed from being a leisure activity of the few to a mass profession required by the growing industry.

However, in the 21st c. with its trend of personalization and humanization, a centralized administrative approach to science and education is no longer totally legit. Reforms planned and conducted by governments meet some opposition in academic circles – particularly the efforts of ministries of education to 'measure' science to ensure its quality seem to lead rather to results that are exactly opposite. Not only in Ukraine but in much larger countries such as China, Brazil, or India, the pursuit of formal quantitative indicators of academic activity under the requirements set up by government bodies leads but to the loss of quality: publications in "predatory" journals, falsification of reviews, destruction of humanities, green light for the enterprising and money-hungry, not the talented and honest academics, placing publishing on a business stream, opening the path to pseudoscience, etc., etc. (Onie 2020; Tymoshyk 2021). That is what can be called "a *pokazuha*-science", as coined by Estonian researcher Jüri Eintalu (2021:117).

The reason for that is exactly the crisis of science, which could even be called its "institutional degeneration": "...it may turn out that the scientific institutions are not producing science, while the "non-scientists" are doing real science" (Eintalu, 2021:116). The same can be probably said about self-

organization as well: it is a “closed”, professional science that faces challenges of being opened and organized with mixed results, while the activities of “non-scientists” are already purely open and self-organized. However, it would be a mistake to call it the desirable “citizen’s science”, as most, if not all forms of “folk science” have little to do with the ideals and methodology of rational inquiries, up to being frank pseudoscience.

If the “organized professional” science finds it difficult to comply to the ethical principles of *communism* and *disinterestedness*, then the self-organized “alternative science” clearly contradicts the fourth Mertonian principle of *organized skepticism*! Still, such self-organization of pseudo-science is rather a lawful offspring of the public disillusionment with the institutionalized science, a result of a forced excessive trust turned into mistrust, maybe even a rejection of science as a whole, with all its knowledge and methods. As stated by Christian Fuchs, in the age of “post-truth politics” and fake news spreading globally through social media, people no longer trust facts and experts – they do not rationally examine “what is real and what is fiction, but assume something is true if it suits their state of mind and ideology” (Fuchs 2023:283).

Still, I think that the crisis in question is the crisis of science as a social institution, and not as a sphere of activity aimed at searching for the Truth. It is not that we do not have any ways of “trusting facts and experts” – it is that traditional institutional criteria of recognizing the facts and the experts are insufficient. The problem is not that the “professional” science is necessarily corrupted – the problem is that in today’s society it faces challenges it can’t overcome just by itself. And even if there are ways of achieving some degree of *self-regulation* among the scientists (Komar 2025), there are still more problems than answers there.

In short, the question of the transformation of science and its self-organization as an Open Science remains, well, open. Will the academics find enough courage to conduct the necessary social transformation of science and its re-institutionalization by their self-regulation, while trying to comply with the ever-actual Mertonian ethical principles? One thing is clear though: Open Science can’t be a result of external compulsory administrative regulation, as it would lead to just the opposite of what Open Science could and should be.

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