

## The “Quiet” Russian Science Renaissance

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### Commentary on

Schiermeier, Q, 2018, “Russian Science Chases Escape from Mediocrity”, *Nature*, vol. 555, p. 297.

### 1. Heads Up: Russian Science is Back

Two weeks before the publication of the relevant post on *Nature* (Schiermeier, 2018) that we are going to discuss below, the President of the Russian Federation, Mr. Vladimir V. Putin, presented to the public a program of major macroeconomic and social reforms aimed at wealth distribution. President Putin made it clear that such a change is in line with the previous, decades-long process of recovery from the disastrous post-Soviet era and grounded on Russia’s sovereignty. He consequently introduced his speech showing an impressive series of warfare technology leaps that seem to mark the country’s worldwide superiority in strategic ballistic nuclear weapons (Tanas & Biryukov, 2018). The United States Department of Defense acknowledged such achievements publicly one month before the Russian announcement (Office of the Secretary of Defense, 2018, pp. 8-10).

A month after *Nature’s* publication, another event occurred that was connected to the speech by Vladimir V. Putin. Vladislav Y. Surkov, former First Deputy Chief of the Presidential Administration, allegedly one of the most influential figures of Russian politics, released a meta-political address without precedent. There he stated that Russia has definitely given up its historical effort to belong to the Western civilization, which turned out to be a haunted house rather than the common home

preconized by Brezhnev and Gorbachev. The milestone is the 2014 annexation of the Crimean peninsula after the fall of Ukraine under the Western political and military influence sphere. According to Surkov, it is time for Russia to reach for its own identity that is neither Eastern nor Western (Surkov, 2018; 2018b).

Both Putin and Surkov express the terms of a new geopolitical dynamic that goes much further and deeper than mere “isolationism” (or “isolation”). They speak for a new political project that includes international liaisons, both cooperative and conflictual, yet calling for a platform of complete cultural and geopolitical autonomy.

This is the context where an ‘antifragile’ (Taleb, 2012) thread outstands throughout the social and cultural change that has affected the world of Russian science during the last 20 years. It is unfortunate that both the majority of the Western public and elites are missing it.

<sup>1</sup> The concept of ‘antifragile’, introduced by Taleb, means something beyond the categories of resilience or robustness, as opposed to ‘fragile’. As such it can be viewed as a feature belonging – broadly speaking – to the wide cluster on non-linear responses. To find a biological example, one has to refer to the hormesis phenomenon. As such the concept has recently found application in many fields, including physics, aerospace, molecular biology and computer science.



Fig. 1. Illustrations in a Russian Science Fiction Book Called "Six Days On Luna".

For example, despite the deep crisis following the dissolve of the Soviet Union, Russian academia has reacted positively to State funding in the field of nanotechnologies since the early 2000s (Karaulova et al., 2014). Aerospace, transmission, electronics, and military engineering progressed despite budget cuts. As soon as it became possible, part of the expertise that had migrated to the buffer zone of private enterprise during the crisis either moved back to academia or joined it within a porous area facilitated by the State.

For decades, the Russian Government has been aware of the problem of the scientific diaspora of the '90s and of the impossibility to call back the scientists that have been lost to other countries. Not many people in the West, though, know that the Russian Federation had launched initiatives for developing relations among these expat scientists and the motherland's institutions, thus connecting the best centres of research in the world effectively to the Russian universities (Germano, 2010; Serafini, 2010).

Russian science never stopped working and relied on the great tradition of its schools in pure and applied disciplines. The crisis of the '90s has been terrible but has been almost completely overcome, while politicians and scientists have learnt its lesson.

We have possibly missed such a phenomenon for two reasons. First, the important cultural barrier that includes language (many scientific works are still published in Russian, even if much less than in the past) but also mentality, education, and a different social perception of the role of science. This has brought several misunderstandings and eventually a radical lack of comprehension of the Russian civilization by the West.

Second, widely depending on the first cause, the strong ideological neo-Cold-War attitude, noticeable also in *Nature*, which is perceived with growing resentment among the population and, finally, among scientists and academics.

Therefore, the news is not that Russian science is on the rise, but that Western scientific media are acknowledging it. Yet, this is through the lenses of a political bias that has never been recorded in a scientific publication, even during the Cold War.

Two bizarre pages of the Editorials on the *Nature* issue of March 15 (Nature, 2018) are devoted to accusing the Russian President Vladimir V. Putin for not doing enough in order to fight corruption and lack of liberalism in Russian academia, save admitting that something is happening, and Western science is observing it with a frown. The editorial note introduces the brief post by the geographer and statistician Quirin Schiermeier, "Russian science chases escape from mediocrity" (Schiermeier, 2018) that begins as follows: "After letting Russian science languish for years, Vladimir Putin has started to pay more attention" (p. 297).

### 3. Nature's bias

The figure of Vladimir Putin, then, dominates both *Nature's* vol. 555 writings on Russian science since the very first lines. The editorial, in fact, opens with, "Vladimir Putin will hardly be remembered as a patron of science". The Author(s) then accuse(s) the Russian President of being "more inclined to line up with the nation's Orthodox Church" than with science (p. 285)—in other words, to be an obscurantist bigot.

Yet the journal is giving its readers some reason to suspect that, in fact, it is most possible that Vladimir V. Putin will also be remembered as a patron of Russian sciences, when it reads: "Putin's government has gradually increased investments and public science spending over the past decade". Further, "The number of scientific papers produced in Russia more than doubled from 2006 to 2016"; and "Russia is now in the top-ten countries in terms of number of research articles produced — ahead of Canada, Australia and Switzerland — according to statistics released in January by the US National Science Foundation" (Schiermeier, 2018, p. 297).

So, what is the issue? It seems that despite Russian science is performing better and better, it fails to satisfy *Nature's* Malthusianism. Curious enough, the journal seems to forget that the enforcement of the very Hayek's ideology that it is upholding (less State, more

competition, and invisible hand) has been responsible for the catastrophic drop of USSR social and economic indexes between 1991 and 1996, when the industrial production shrunk to 50% in less than 5 years. This is the period when Russian science was devastated by the worst lack of funding ever, causing the drama of scientific Russian diaspora that left a generation-wide academic vacuum throughout the following 20 years. It took a strong State-centred approach to make the country's economics surge from such an unprecedented disaster, and GDP (Gross Domestic Product) to come back to the Soviet level in 2007 (Smirnov, 2015), while also universities and research centres started to recover (Kulykov, 2017).

General critics against the “top-down innovation by state-owned companies” (Nature, 2018 p. 286) have been debunked recently by Mariana Mazzucato (2011; 2013):

The assumption that the public sector can at best incentivise private sector led innovation (through subsidies, tax reductions, carbon pricing, green investment banks and so on) — a claim being propagated heavily in the UK, especially but not only in the face of the recent crisis and ensuing deficits — fails to account for the many examples in which the leading entrepreneurial force came from the state rather than from the private sector. (Mazzucato, 2011, p. 115)

Ironically enough, we are talking of the place on Earth where the efficiency of State-organized technological research has widely demonstrated its efficacy via facts long ago, in both the latter Soviet Union and contemporary Russia. In a few years, the USSR recuperated a half-century technological gap with the West under Stalin, performing a gigantic, “top-down directed” leap (yet paying for it heavily in social terms). Such an effort eventually led to industrialising a huge, rural country in less than 10 years, and achieving a technological leadership expressed by the victorious space race over the United States in the late '50s. The Russian Federation, on the other hand, has recovered a status of global power especially due to its technological expertise, despite mockeries such as “a gas station masquerading as a country” (Rapoza, 2017). Most remarkable is the efficiency ratio between budget and strategic results after comparison with most Western countries, especially the United States whose military budget is 9 times higher than the Russian (Stockholm International Peace Research Institute, 2018).

In other words, *Nature's* editors lamenting scarce results “in aerospace and energy, for example” (p. 286) due to scarce spirit of liberal competition are at odds with the results (from SU-57 vs. F-35 airplane, for example, see Tuchkov, 2017) of what we may be tempted to ironically call “collaborative national science”.

Science is not an innocent activity, despite rhetoric depicts it as unbiased, peaceful, and detached from political games. In this note, we had to refer to what Giuseppe Sermonti pointed out as the real root and purpose of actual, modern science, i.e. the horror of war (Sermonti, 2002). We are, therefore, not at all surprised by the political bias shown by *Nature*. Notwithstanding, let us conclude by disclaiming a specific position of *Nature* editorials, where they affirm that “anti-Western sentiment prevails” in Russia (p. 286). Sure enough, unlike the majority of Western citizens, Russians are aware of what is happening on the opposite side of the new Iron Curtain, and have several reasons for being critical, if not dismayed. The radical position by Surkov, quoted above, expresses it pretty well. Nevertheless, it is difficult to find more sympathy towards the West than in Russia. This is testified by the entire Russian culture: classic, popular, ancient, modern, and contemporary, including literature, art, movies, pop music, and, of course, science. The feeling of brotherhood with the United States and the fascination towards Europe is all in the phrase by Fyodor Dostoevsky: “Europe will discover us, one day, as it did with America”. A pseudo-colonial, paternalistic, or aggressive attitude is a very wrong answer to such a centuries-long, high-cultivated longing for dialogue.

Further, Russia is aware of distinctions within the so-called “West”. For example, there exist historically privileged relations with Mediterranean countries such as Italy and Greece. Actual and potential scientific cooperation and dialogue with these countries and their specific epistemological traditions reflect a hope-bringing asymmetry.

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