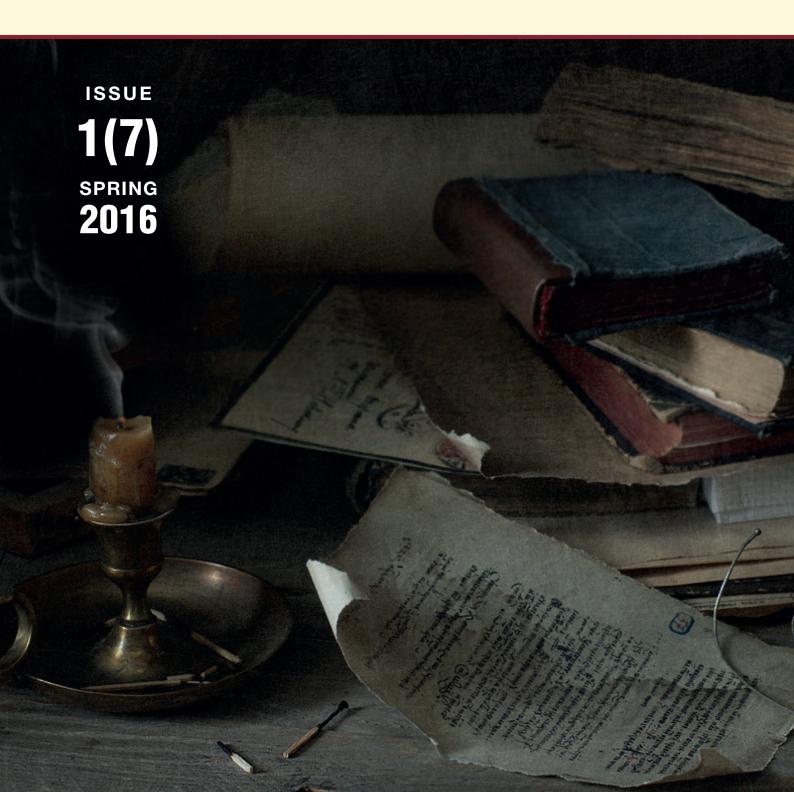
## HERB



Higher Education in Russia and Beyond

Publish or Perish





#### Dear colleagues,

We are happy to present the new issue of Higher Education in Russia and Beyond, a journal that is aimed at bringing current Russian, Central Asian and Eastern European educational trends to the attention of the international higher education research community.

The topic of this issue is the already famous principle 'publish or perish', which is spreading fast across university systems all over the world. There are different ways of translating it into Russian — some are more formal, others less formal — but all of them convey the same message: in order to prosper (and, actually, just to stay) at university nowadays, faculty have to publish in addition to teaching. Of course, the proliferation of this principle has an impact on academics, on their self-perception and their strategies.

However, there are further implications to it. Universities (which face the principle at macrolevel because publication count is becoming an important institutional efficiency assessment criterion) have to adjust their employment policy accordingly. Publication count and quality are becoming key factors in terms of academic recruitment and promotion. Universities understand that such requirements may not suffice in the context of a weak academic labor market, so they are trying to provide their staff with an opportunity to master the competences they are lacking in order to learn to publish successfully. The journals market is responding too. For example, new low-quality titles are launched to swiftly accommodate the growing demand for 'publications in high-impact journals' - in exchange for a relatively small fee. As a result, though the number of articles is multiplying, it is partially due to the growing segment of 'publications' that don't match even the minimum quality criteria.

All of these aspects are discussed in the present issue.

'Higher Education in Russia and Beyond' editorial team



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National Research University Higher School of Economics is the largest center of socio-economic studies and one of the top-ranked higher education institutions in Eastern Europe. The University efficiently carries out fundamental and applied research projects in such fields as management, sociology, political science, philosophy, international relations, mathematics, Oriental studies, and journalism, which all come together on grounds of basic principles of modern economics.

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#### Authentic Improvement: A Case for Flexible Faculty Evaluation Policies

#### Alexander M. Sidorkin

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For those who belong to the exclusive club of world-class universities, the need to publish is a non-issue. It is something you either do — or perish, as the catchphrase goes. However, for universities with strong teaching traditions, both liberal arts colleges and regional universities, the rationale is not always obvious. "We are not going to become the next Harvard anyway. And there are too many pointless publications already in the world. Why should I take time away from my students?" This is how the questioning usually goes. The short answer is that without an active scholarship agenda, one can only be successful as an undergraduate instructor, and only in foundational survey courses. Anything above that requires a clearly established scholarly agenda and a reputation. I am sure there is a negative correlation between one's publication record and the mean age of required readings in one's syllabi. To be able to read new research, one has to do one's own new research. As graduate education continues to expand, it behooves universities to strengthen their scholarship output.

It is easy to make the case why we all need scholarship but

much more difficult to explain how it could be done. The

barriers are many. In many teaching-oriented schools, it is actually very difficult for faculty to produce good quality scholarship, and this is only partially due to high teaching loads. In social sciences, research is impossible without access to data or an opportunity to obtain one's own qualitative or quantitative data. Both need time and money. The lack of high quality publications makes faculty less competitive in grant seeking. They just don't have the right pedigree to be competitive, which creates a vicious cycle: lack of funds to do good research leads to no research record to get funding. For many universities with aspirations to enter the worldclass club issues are very similar. Sometimes in some countries, a windfall from government-funded excellence initiatives may temporarily relieve the pressure of funding. In addition, those in non-English speaking countries experience language barriers that perhaps only Nordic and Dutch universities have been able to penetrate. Yet, the rest of the mix is the same for English and non-English worlds: lack of skills, connections, access to data and equipment, large teaching loads. Russian higher education represents an interesting case of distorted labor practices. As instructors are paid mostly for face-to-face encounters, faculty are very reluctant to redistribute hours within academic plans in favor of more independent work. Who is going to grade all those assignments for free? On the other hand, university leadership is often suspicious that more independent work for students will just tempt professors to work less and seek additional part-time work in other universities. The confluence of such interests produces inefficient lecture-centered teaching practices, with poorly paid and overworked faculty, who have no time for real research. Despite all the peculiarities, I think that first-rate universities in emerging economies have a lot in common with second- and third-tier state schools in the developed world. Both want to move up the ratings, and both have barriers to overcome in engaging in quality research.

In this context, I would like to invite us to think about exceptions — about faculty who seem to be able to break through the institutional and cultural barriers and establish themselves as leading scholars in their respective fields while working at a second-tier university. Perhaps by understanding how they do it university leaders will better understand what kinds of institutional reforms are needed to move their entire institutions on to the next level.

The characters below are entirely fictional... And if you recognize yourself, just saying hi, and thanks. All the cases originate from colleges of education because that is what I know best.

Susan is a super-engaged early childhood educator: with her professional community, with her many students, friends, family, her own biological and adopted children, their schools and friends, books, the news, and about anyone she meets for the first time. That incredible inflow of encounters and relations gives her a kind of dense phenomenological data that make her an engaging author. One of the leading publishers recognized her talent, and over the years she has built a relationship with an editor that trusts her instincts and lets her work on anything she likes. The editor knows well that her books will be engaging regardless of the topic and that people will buy them. But the books are not just popular; they have a serious scholarship dimension and have gained recognition in the scholarly community as well. Susan does not care much about grants, nor does she demand release time; she has just learned to get by without those.

Michael's strategy is somewhat similar. He writes books on literacy and has built a strong relation with another leading publishing house. But his emphasis is on graduate students, who are his research laboratory. He spends an enormous amount of time coaching, teaching, observing. That gives him enough materials for drawing generalizations about what works in literacy instruction and what does not. The publishing connection also gives him access to book tours and an opportunity to engage with hundreds of teachers across the country, to hear their stories, and receive their feedback. I don't believe he collects much data from them formally but for the kind of practice-oriented research it is not necessary. And of course, Michael probably has the highest Hirsh index on campus.

Tony's success is connected to an opportunity his predecessor saw and snatched. Back in the 1960s, the US Federal Government sought to establish centers on Excellence in Developmental Disabilities in every state. The Feds supported them with small grants and intentionally tried to place them not in flagship or Ivy League schools but those second-tier teaching universities. Tony was able to use the really small advantage by positioning his group as the center of expertise within the entire state and gain national recognition. Success breeds success, and later he was able to bring in very significant, highly competitive federal grants, as well as state training grants. One of the secret of his success is that his unit is somewhat independent of the university's bureaucracies, and thus can behave as a true entrepreneurial organization, with its own small staff, its own budget, and schedule. Yet he is also very helpful to colleagues within the university's Special Education department, and involves them in grant-writing and projects.

What's the moral of these stories?

- 1. It is highly unlikely that faculty will all have the same strategies in building their scholarly identities. So, be prepared for a variety of scholarly engagements, and keep tweaking your faculty evaluation and promotion policies until they are flexible enough to accommodate the diversity of academic careers. Those systems can be both flexible and rigorous. Moreover, faculty need to be made aware of different paths to excellence and explicitly informed about their existence.
- 2. It is also unlikely that the entire faculty of any university will achieve scholarship excellence all at once. Perhaps it is wise to focus on a few break-throughs areas or individuals first and make sure they gradually enlarge the orbit of influence to give opportunity to others. Or, more likely, your university has such champions already; it is only a matter of allowing/expecting them to include others. Scholarship is, as we all know, a network of ideas, practices, and individuals. One person can provide access to many but that requires strong institutional support and encouragement, otherwise islands of excellence will remain isolated.
- 3. It is important to recognize that none of my three heroes would be doing well at a top research-intensive university. Their scholarship does not fit well, and some of them were actually late bloomers. They would have been denied tenure at a highly competitive place, and would not have the freedom to pursue their interests. Second-tier and international universities must recognize their unique niche in the talent market, and try to specifically attract the kind of passionate, talented, self-directed people by promises of freedom and independence unobtainable at research-intensive schools. It was easy to make tenure at the places where Susan, Mike and Tony started their careers, and that is the point. Some people flourish in a highly competitive rigorous place; others do better in a more relaxed atmosphere.

4. All three learned to capitalize on a specific resource. Without resources, there is no development. But those do not have to be monetary or even tangible resources. Connections, reputations, unique experiences — all of these can be used. People need help in recognizing such resources and latching onto them.

Here is a story illustrating the last point. Many years ago, our dean was talking to a group of young faculty about a new program we proposed. He looked at us and said, "Together you probably speak 7 or 8 languages, and come from four different countries. Why don't you build your new program using your strength?" It just did not occur to us but an experienced administrator should be good at spotting a resource when he sees it.

Who are these lessons for? I am thinking here about both second-tier universities in the US and other rich countries and top universities in emerging economies, such as Russia. All of them are trying to change their organizational structures to increase their scholarly output. Both groups are playing in very crowded and competitive fields. In my opinion, one of the mistakes of the Russian excellence initiative, for example, is its attempt to directly emulate the world's leading universities. I argue for a more flexible, more realistic approach to change. We cannot expect all faculty overnight becoming top scholars in their fields. Unlike highly selective universities in countries with huge pools of talent, we cannot recruit the best only. But we can allow for more diversity in academic careers and use our strengths. We need to look for unique and idiosyncratic people like Susan, Michael, and Tony, and let them grow as scholars in their peculiar ways. Let us call this the authentic improvement theory.

#### **Essential Information about Predatory Publishers and Journals**

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Predatory publishers threaten the integrity of research and victimize honest researchers.

My first experience with predatory publishers was in 2008, when I began to receive strange emails — mostly from South Asia — inviting me to submit research manuscripts to journals I had never heard of before. The spam emails had headlines like "Call for Paper," which is incorrect English (it should be "Call for Papers"). What surprised

me the most was that the journals' websites stated that they charged authors to publish in the journals, a radical change from subscription journals, in which authors were not charged to publish.

The emails signaled to me the beginning of gold open-access publishing. In gold open access, the publishing costs are covered by fees charged to the authors upon acceptance of their manuscripts for publication. The advantage of this publishing model is that the published articles are free for anyone to access.

While open access (OA) was initially promising, its weaknesses quickly began to appear. Publishers soon realized that they could make more money from author fees if they accepted more papers. Peer review began to be seen as a threat to a publisher's income, because when it is conducted properly, papers are often rejected for publication. Rejection means the loss of revenue for publishers using the gold OA model.

Accordingly, many gold open-access publishers began to perform only cursory peer reviews, accepting most papers submitted and pocketing the fees paid by the authors. Now, they typically do everything they can to trick authors into submitting papers in order to get the author fees from them. So, by definition, predatory journals and publishers are those that exploit the gold open-access model to profit from scholarly publishing in a dishonest way.

Indeed, predatory publishers are dishonest, they lack transparency, and they do not follow scholarly publishing industry standards. Many of them misrepresent their true head-quarters locations, claiming they are based in London or New York when they are really based in Pakistan or India.

I already mentioned their practice of spamming, and this has reached epidemic proportions, with researchers sometimes receiving several spam emails from scholarly publishers every hour. Publishers using the gold open-access model especially target researchers with grant money, for these funds can be used to pay article processing charges. Thus, authors in the bio-medical sciences, where grants are more common, are frequently targeted by predatory journals.

#### Why They Are a Problem

Predatory publishers hurt scientists, science, and the communication of science. As mentioned, they trick scientists, pretending to operate as legitimate publishers when they are essentially counterfeit and only seeking to earn a quick profit. Busy scientists often lack time to sufficiently investigate a publisher and can mistakenly submit a paper to one of their journals or accept an editorial board invitation.

Low quality journals pollute science with junk science and unvetted research. Some scholarly indexes aim to have a broad coverage of journals and include these predatory journals in their indexes. One example is Google Scholar, which indexes articles from hundreds of low-quality and predatory journals.

Researchers preparing literature reviews are faced with da-

tabases that include junk journals in them, so they have to carefully select whether a given article should be cited or not. Moreover, students frequently use these databases, but they lack the experience and credentials to sort out the authentic science from the junk science.

Junk science is also called pseudo-science, and it represents theories and conclusions that cannot be supported by science-based research. Many political activists are now using predatory journals to publish their ideas as science. For example, anti-nuclear activists write articles making nuclear energy appear more dangerous that the data really indicates. Also, people creating medical compounds, such as new drugs, now regularly write articles in predatory journals that "find" that the drugs they invented are very effective.

Because the journals only care about getting the money, one can use a predatory journal to make any claim one wants. Indeed, one published article even describes[1] civilizations on the planet Mars.

#### **Complicit authors**

Sometimes scholarly authors take advantage of the easy publishing that predatory journals offer for their own benefit. In many cases, universities base faculty evaluations and promotions only on the number of articles published, and they don't distinguish between high quality and predatory journals. It is pretty easy to write up a scholarly article and get it quickly published in a predatory journal. Here the victims are the honest researchers, those who submit their work to selective scholarly journals, where it is more difficult to publish and the process is slower. Increasingly, there are predatory publishers that specialize in quick, easy, and cheap publishing.

#### **Approved scholarly indexes**

Many universities base their evaluation on faculty publications in journals included in prestigious indexes, such as Web of Science or Scopus. This "whitelist" approach is not without its flaws, as the indexes sometimes make mistakes and include easy-acceptance, pay-to-publish journals. In some cases, respected journals cannot resist the temptation to generate much revenue, so they lower their standards, accepting most submitted papers.

#### **Geographic Focus**

Predatory publishers have been more successful in some regions of the world than in others. One broad area that has seen many victims of predatory journals is Eastern Europe, the former Soviet republics, and Russia. In these regions, academic evaluation is often based merely on counting the number of papers published. This matches perfectly with predatory journals, who offer quick, easy, and cheap publishing. Many researchers submit papers to predatory journals but fail to realize they are counterfeit journals. Their work is quickly accepted and published, and they soon receive an invoice, usually an unexpected one, from the publisher.

When a few predatory journals invade a region and be-

come successful at attracting articles and payments from researchers, others quickly follow. Then the number of publisher multiplies, and the number of spam emails grows also. We are now beginning to see low-quality and predatory open-access publishers being established in Eastern Europe and the former Soviet Republics.

#### **Identifying Predatory Journals**

The characteristics of predatory journals are becoming well known. As mentioned, predatory journals use spam email to solicit articles, they have a fast and often fake peer review process, and they supply false information about their locations. Many now also make false claims about having impact factors or being included in prestigious academic indexes. Now it's important to verify all claims made by open-access journals, for many are dishonest.

The lists I publish also identify predatory journals and publishers, and many researchers find them useful. These lists are found at < scholarlyoa.com >. Compiled with the help and advice of many active researchers, the lists include publishers and journals that ought to be avoided by honest researchers.

#### **Long-Term View**

While publishing one's research in a predatory journal may bring temporary gain, the long-term consequences are likely to damage a researcher's reputation. It is not uncommon for predatory journals to disappear from the internet after several years. Most are one-man operations, and the published articles have no backups. Researchers may be stigmatized for publishing in easy-acceptance, payto-publish journals. Potential employers may reject applicants who have published articles in predatory journals.

For all researchers, the best course of action is to avoid predatory journals. Carry out high-quality research and submit it to the best possible journals. This strategy is more difficult and time-consuming, but it eliminates the risks predatory journals bring and offers researchers better and more secure long-term benefits.

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#### Riding with the Metric Tide: 'Predatory' Journals in Scopus

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Metrics usage in higher education management has clearly become an issue of great importance. A recent high-profile policy report on this topic, commissioned by the Higher Education Funding Council for England, is aptly named The Metric Tide. It reiterates a number of basic principles like "don't evaluate individuals using journal impact factors" or "peer review can't be substituted by metrics," and stresses that, "those involved in research assessment and management should behave responsibly, considering and preempting negative consequences [of metrics usage] wherever possible" (Wilson 2015).

One of the obvious consequences is gaming with indicators, which comes in various types and level of severity. This paper deals with one particular technique centered around so-called "predatory" journals indexed in Scopus database. It is a part of a broader research on the impact of metrics-based policy measures on various university systems. See the introductory article about "predatory" publishing by the foremost authority on this topic prof. Jeffrey Beall, p. 07.

#### The Roots

Scopus is one of the two standard bibliometric databases widely used in research assessment across the world. It is a reputable source backing Excellence in Research for Australia and British Research Excellence Framework nation-wide university evaluation systems amongst others. None of them actually use Scopus publication counts as direct metrics. That is natural because the objective of these evaluations is to measure quality, not quantity.

Yet, for those nations that lack a culture of elaborate — and expensive — academic evaluations but strive to develop "world-class research universities," Scopus or Web of Science metrics seem to be an affordable substitute. What's more, ignorant officials tend to oversimplify even the most

basic indicators in order to make their KPIs more achievable. In particular, average citation counts widely used in commercial rankings like THE and QS (both employ Scopus data) are substituted by metrics like "total number of publications in the Scopus" or "presence of publications in the Web of Science in the last 3 years". Another reason for using publication counts as KPIs/prerequisites instead of citation data is straightforward: while citations accumulate slowly, articles are quick to appear and allow more rapid measurement.

The whole rationale behind counting papers is based on a belief that WoS and Scopus guarantee sufficient academic quality and global reach. That is clearly not true, despite what Elsevier and Thomson Reuters sometimes tell us. But these two corporations have very different market strategies. To put it simple, WoS sells "top quality," Scopus sells "top scope," hence the number of journals indexed in Scopus is currently almost twice as high as in the WoS. Naturally, it is Scopus that is currently most plagued with "predatory" publishers.

Scopus indexes over 21,000 journals of increasingly varied reputation. Among them we have identified several hundred indexed in Jeffrey Beall's lists of "predatory" journals and publishers. These journals capitalize on aforementioned demand for Scopus papers that are used not for scholarly communication but for reporting, listing in CVs and conquering various formal barriers (e.g., in Kazakhstan and some other countries one cannot obtain a PhD without WoS/Scopus articles). Usually such journals will publish anything that vaguely resembles an academic paper for a price of \$300-700 per article, mimicking peer review and editorial board activities.

In the former USSR such journals are complemented by a network of publication brokers offering all-inclusive packages featuring writing, translating, packaging, choosing a journal and getting through peer review — all for an additional fee. Such brokers widely use spam and all types of ads, sometimes they even paint their phone numbers with the word "Scopus" on pavements near universities. This toxic situation has evolved here in the last 2-3 years, and still most "predatory" journals popular in CIS countries are produced in the countries where Scopus publications became an academic currency much earlier. Besides, sometimes metrics in Russia sound like "number of articles in foreign Scopus-indexed journals," so "foreign" means much more expensive and lucrative.

In the case of Russia, the incentives to boost publication counts are defined by the federal government and funding bodies. For example, to submit a grant application to the Russian Science Foundation, one has to have 11 WoS/Scopus papers in the preceding 5 years. The 5-100 excellence project (see HERB №1/2014) uses publication counts as the main metric, which has led to some of the participating universities engaging in 'predatory' publishing on an unprecedented scale. As far as we know, similar metrics and policies are being implemented in many other countries. But enough whining, let's get to the data.

#### The Harvest

All in all, there are articles from more than five hundred "predatory" journals indexed in the Scopus database, according to our findings. By "predatory" we mean those currently included in the Beall's List or those stopped being covered by Scopus for quality reasons (all the articles published in them before delisting remain in Scopus forever). We did not include in our analysis journals published by Frontiers Media S.A. because we, amongst others like the Committee on Publication Ethics, consider this publisher to be ok and disagree with Jeffrey Beall. The largest included publisher in terms of the number of journals is Bentham (United Arab Emirates), which owns 190 Scopus-indexed titles. All the others are much smaller and are usually based in India, Pakistan or USA. Our list includes 531 "predatory" journals in Scopus, of which 420 were still covered by this database in 2014-2015. Of course, they differ in terms of quality but their normalized citation scores (SNIP and SJR) are on average very low. Median SNIP-2014 for the 420 journals is 0.45 and median SJR-2014 is 0.2, while the average for both metrics in the whole Scopus journal list is 1. World "predatory" publication counts soared in 2009-2012 and stabilized in 2014-2015, primarily because Scopus finally did delist some of the most outrageous outlets. This, however, did not lead to a decrease in "predatory" publications in India and Russia. Iran, on the contrary, managed to greatly reduce the number of such articles by introducing and updating national blacklists. Such lists are currently implemented in Thailand, Nigeria, Turkey and even in war-torn Syria. Most of them use Jeffrey Beall's lists as a starting point. The overall success of such restrictive measures depends on promptness of action and the degree of control over scientists by those implementing blacklists. Even more worrying is the next graph, which shows the shares of publications in "predatory" journals amongst all the Scopus publications produced in the following countries. While China, Iran and some other countries have managed to reduce the share of such publications, Russia and India have increased such shares, and for the latter it has already surpassed 15%. In Indonesia the situation is even more drastic: 23% in 2015. But the real leader is Kazakhstan, where in 2013–2014 this indicator amounted to 47%–49%, dropping to circa 30% in 2015 after some of the "predatory" journals popular in this country were delisted. The former leader was Nigeria with 24%-30% in 2010-2013, then dropping to 14%. We link this decrease to the wide-

Shen and Björk state in their recent paper that, "the problem of predatory open access seems highly contained to just a few countries, where the academic evaluation practices strongly favor international publication, but without further quality checks" (Shen and Björk 2015). Our analysis suggests that the problem could be much more severe and affect a wide variety of territories. In fact, today there are already 38 countries each with 1000 articles in Scopus-indexed 'predatory' journals published since 2011,

spread implementation of Beall's lists as official blacklists

by governments and universities.

**Figure 1.** The number of articles and reviews in 531 "predatory" journals in Scopus by country (shown here are top 10 countries in 2015). Data for 2015 is preliminary and slightly underreported because not all of the articles published in 2015 are already indexed.

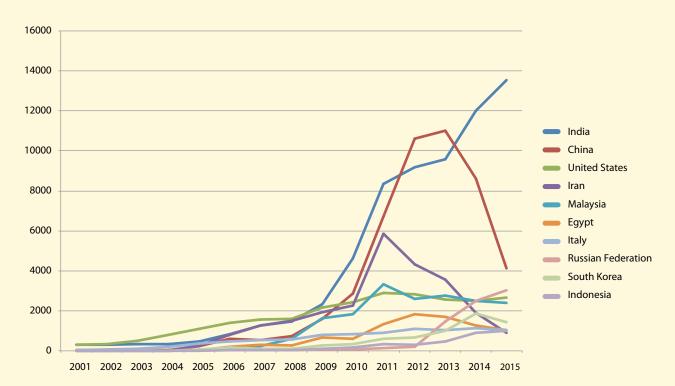
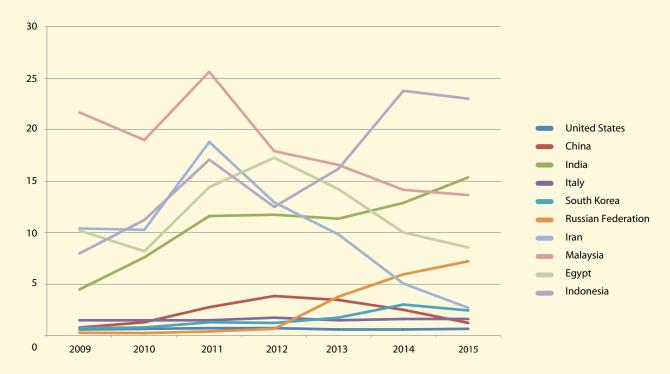


Figure 2. The share of articles and reviews (%) in "predatory" journals amongst all articles and reviews indexed in Scopus.



and for several very large countries the situation is very worrying, to put it lightly. In some countries the whole scholarly communication and academic reputation domains are completely altered by this new phenomenon. It is mostly true for those nations where the majority of researchers have no experience of publishing papers in respectable peer-reviewed international journals. For them simply buying a Scopus article is the most natural reaction towards governmental- or institutional-level pressure. Some of these researchers are so disconnected from the international academic community that they simply don't understand that they are doing something wrong and spoil their CVs instead of improving them.

The situation for universities in the affected countries is even worse. Most of them are desperately trying to gain international recognition and get into ranking tables; they are subject to regular government evaluations based on primitive Scopus and WoS indicators. Increasing publication counts in "predatory" journals not only makes direct reputational damage clearly visible for anyone with access to Scopus but also significantly decreases the average number of citations per paper, which is the main indicator used in several international rankings. Citations are slow to accumulate and because of that we cannot yet measure the effect of the recent "predatory" boom in Russia. Nevertheless, we can use the share of publications in the most cited journals (top 10% by SNIP, SciVal data accessed on Feb 17, 2016) as a rough proxy. One of the leading Russian universities, a participant of the 5-100 excellence initiative which published 1500+ articles in Beall's List journals, managed to bring this share down to 2.5% in 2014. This is really low comparing not only to Harvard (39%) or EU average (23%) but even to Russia's average of 7.6%.

In line with well known earlier research (Butler 2003), our findings show that when oversimplified metrics turn up, quality goes down. This is an important lesson for those who devise such metrics, and they'd better learn from it as quick as possible.

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# Publish or Perish? The Highly Productive Research Elite in European Universities from a Comparative Quantitative Perspective

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#### Introduction

Research in higher education has consistently shown that some academics publish a lot, while others publish at moderate rates or not at all. Institutional reward and promotion structures have always been focused on research achievements — that is, on publications, and academic prestige comes almost exclusively from research. As shown over the decades by Alfred Lotka, Derek de Solla Price, Robert K. Merton, Jonathan R. and Stephen Cole, Paula Stephan, and Philip G. Altbach, among many others, the majority of university research production comes from a minority of highly productive academics.

Literature identifies a number of individual and institutional factors that influence research productivity, including size of the department, disciplinary norms, reward and prestige systems, and individual-level psychological constructs such as a desire for an intrinsic reward of puzzle-solving. Faculty orientation towards research is generally believed to predict higher research productivity; so are: the time spent on research, being a male, faculty collaboration, faculty academic training, years passed since PhD completion, as well as a cooperative climate and support at the institutional level.

The "publish or perish" theme refers to both research non-performers (or non-publishers) and top performers. Here we shall focus on high research performance and its correlates from a comparative European perspective.

#### **Data and Methods**

Primary data come from the global CAP and European EUROAC research projects on the academic profession ("Changing Academic Profession" and "Academic Profession in Europe"). The total number of returned surveys was 17,211; it included 1,000 to 1,700 surveys from most European countries and 3,700 surveys from Poland. There were 13,908 usable cases of research-involved academics from 11 countries: Austria, Finland, Germany, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Switzerland, and the United Kingdom. The combined CAP/EUROAC

dataset is the most comprehensive source of cross-national attitudinal and behavioral data on academics available today. In particular, the data refer to a subpopulation of highly productive academics (N=1,583), contrasted with a subpopulation of 90 percent of the remaining academics (N=12,325). Specifically, a subsample of 1,583 highly productive academics produced 32,706 out of 71,248 journal articles and book chapters (or 45.9%) in the three-year period studied (moreover, the upper 5% of highly productive academics produce on average 33% of all journal articles). We explored research productivity defined as the self-reported number of refereed journal articles and chapters in academic books that the respondent had published in the three years prior to the survey (2007-2010). "Research top performers" were identified as those ranked among the top 10% of academics with the highest research performance in each of the 11 national systems and five major clusters (by research field).

#### **Summary of Research Findings**

Research top performers give substance to European research production: without them, it would be halved. Consistently across all the 11 European systems studied, on average, slightly less than half (45.9%) of all academic research production comes from about 10% of the most highly productive academics. And in four systems, the share is near to or exceeds 50% (Austria, Finland, Poland, and Portugal). If the research-active European academic profession employed full-time at universities is divided into two halves, the upper most productive half produces more than 90 percent of all articles (91.5%), and the lower most productive half produces 8.5% (as reported in full in Kwiek 2015b and 2015c)

Top performers work much longer hours, as t-tests for the equality of means show: week by week, month by month, and year by year. Their longer total working time is statistically significant for all countries. The mean for the annualized total working time differential between them and the rest of academics is 6.2 hours, ranging from 2.2 hours in Italy to 9.4 hours in Norway and 10.2 hours in Germany. In other words, for example, German top performers, when compared with the rest of research-involved German academics, spend on average extra 66.3 full working days in the academia per year (10.2 hours times 52 weeks divided by 8 hours per day). There is a standard average working pattern for top performers: the time they spend on research is on average 28.5% higher. They also spend more time on teaching, service, and administration.

The division in role orientation (teaching/research) between top performers and the rest is clear (and all differences are statistically significant): top performers are more research-oriented than the rest, as z-tests for the equality of fractions show. Statistically, being interested "primarily in teaching" virtually excludes such European academics from the class of research top performers, and being research-oriented is statistically a must. The distribution of research role orientation is almost universal across all the countries studied.

Based on the combination of inferential and multiple regression findings, top performers emerge as much more cosmo-

politan (the power of internationalization in research, see a detailed report in Kwiek 2015a), much more hard-working (the power of long overall working hours and long research hours), and much more research-oriented (the power of a single academic focus) than the rest of European academics, despite differentiated national contexts.

#### **Conclusions and Policy Implications**

The European research elite is a highly homogeneous group of academics whose high research performance is driven by structurally similar factors. The variables increasing the odds of entering this class are individual rather than institutional. From whichever institutional and national contexts they come, they work according to similar working patterns and they share similar academic attitudes. Highly productive academics are similar from a European cross-national perspective, while at the national level they differ substantially from their lower-performing colleagues. They represent a universal academic species and they share roughly the same burden of academic production across Europe.

Policy implications are more important in systems where research funding is increasingly based on individual research grants rather than in systems with primarily institutionally-based research funding, and are different for competitive and non-competitive systems. The tension between teaching and research time investments is likely to increase when more competitive research funding schemes are introduced.

A new typology of the European academic profession emerges: there are top performers, moderate and low performers, as well as non-performers when it comes to research. The academic behaviors and academic attitudes of research top performers are worlds apart from those of other academics. In terms of research productivity, there is no single "academic profession" — there are only "academic professions" in the plural. Consequently, the "publish or perish" principle relates to different segments of the academic profession to different degrees: those who publish a lot are likely to keep publishing at the same high rates, while those who do not publish still seem unlikely to perish. However, the coexistence of the two contrasting segments of academics may raise ever more intra-institutional tension.

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### **Publish or Perish:** Case of Latvia

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The aim of this article is to discuss the role of publication requirements and current challenges for academic positions and faculty hiring and promotion in Latvia.

#### Introduction

The requirements for academic positions are expanding rapidly all over the world. Faculty's scope of activities is already very broad: teaching locally and internationally, supervising student papers, participating in national and international projects, representing the interests of academic staff in professional organizations nationally and internationally, participating in international conferences, being members of scientific committees, and, of course, joining editorial boards of scientific journals, reviewing articles, conducting research, publishing research results in nationally and internationally recognized journals, etc. The above mentioned activities don't represent a full list of requirements. The minimum is defined by national legislation and additional criteria are set by universities themselves.

#### **Publication Requirements for Faculty**

During last decade, the focus shifted towards publications as the main indicator of faculty performance quality. The main rationale behind this is to improve the results of universities in different ranking tables or to get additional funding from the state.

There are no publication requirements mentioned in academic contracts in Latvia. The requirements for publications for associated professors and full professors are clearly set by governmental rules defining the minimum of publications. The requirements for other academic positions are set by universities themselves and are usually defined in internal documents according to institutional HR policies.

Governmental rule No. 391 of September 4, 2001, issued in accordance with Art. 34.1 of the Law on Higher Education, says that in order to be elected as associate professor, the candidate for the position has to have at least 3 publications within the preceding 6 years, and for the position of full professor — 5 scientific articles. Yet, professors are encouraged to deliver more than the required minimum as expectations regarding their research performance in the society and in universities are growing.

There is an additional criterion which says that scientific publications have to be cited in the data bases included in the scientific publications list recognized by the Latvian Scientific Council.

Due to the changes in the legal status of universities and the Latvian Scientific Council, this list is not mandatory for universities anymore. The list of recognized publications includes articles and proceedings by the world's leading academic publishers, such as: Academic Press, ACM Press, Addison-Wesley, American Mathematical Society, Artech House, Birkhäuzer Verlag, Cambridge University Press, Chapman and Hall, Digital Press, Ellis Horwood, Elsevier Science, Oxford University Press, Prentice Hall, John Willey and Sons, Word Scientific Publishing, etc.

#### **Legislation and Autonomy of Universities**

The issue of whether setting detailed requirements for academic positions at national universities by the state is legal is not fully considered by all stakeholders. Previous governmental rules that specified such requirements were accepted when universities were organizations directly managed by state but due to the recent legal changes when universities became derived public persons (a specific Latvian legal entity, like municipalities), the government can only set guidelines to be used be universities' academic councils. Yet, the effective governmental rules limit the autonomy of universities to appoint their own staff. There is a need to update these rules to avoid inconsistencies between universities' legal status and the requirements set in the legislation.

#### **Latest Developments**

In spite of the legal issues mentioned above, in 2015 the Ministry of Higher Education and Science of Latvia invited different stakeholders to form a group that would draft new, extended requirements regarding scientific publications.

The Ministry's State Secretary suggested that minimum annual publication requirements in journals cited by Web of Science or SCOPUS should only be set for associate professor and full professor positions. For full professors, the number of publications will remain the same (at least 5) but for associate professors, it will increase to 4. Since only publications in specific journals count, it is clear that the pressure to improve research performance will increase. These requirements are currently being discussed by the working group as there are contradictory views on this proposal.

The main reason for raising the requirements is the prevailing understanding that this leads to higher quality of research and allows to better position Latvian universities internationally, as well to attract external funding. However, many faculty members remain critical because they believe that such an approach could lead to so-called "shortermism" as pressure to increase quantitative results could decrease the quality of research. Setting such requirements without taking into consideration the level of the whole research-related infrastructure (e.g. funding, time allocation, available equipment, motivation system, etc.) would

lead to demotivation and disorientation of academic staff. Therefore the focus has to shift from the outcomes to the whole process of research management and understanding the "bottlenecks" of institutional capacity to deliver the desired results.

Debates circle around the issue of whether such requirements are to be set at institutional or national level, especially keeping in mind that university professors who do not hold positions in research institutes don't receive any special funding to conduct research. Some universities are registered as research institutes and use the public resources originally targeted for supporting faculty-led research to co-finance different projects. Since the resources are limited, not all of the members of academic staff receive their fair share of research funding. There is also a number of fields where leading academic journals are not cited in Scopus, e.g. the study of Baltic languages. Discussions continue as there is no common understanding of how the new requirements will affect academic dynamics. All the parties involved agree, however, that a transition period will be necessary for everyone to adjust to new rules. Another issue on the political agenda these days is that professors can only be elected for a maximum period of 6 years without an opportunity to get a tenured position.

#### **Financing Research at Universities**

Universities' research funds are rather low in Latvia. They witnessed huge budget cuts (up to 60%) during the global economic crisis of 2008-2009. Due to budget constraints, not all universities (private or public) have access to Scopus and Thomson Reuter's data bases. The remuneration for publications can only be received after an article has been published, the pressure to attract research funds has shifted towards faculty members themselves, etc. The size of such remuneration is determined at institutional level, so it varies greatly from one university to another. It depends on the availability of finances, the amount of publications per academic staff, the level of journal, etc. For example, author(s) can receive up to 700 euros (gross) for an article in the field of social sciences published in Scopus journals.

A reform of higher education finance system has begun recently. It provides for additional research funding based on previous research performance (including publication results).

This leads to the conclusion that in the coming years, the pressure to publish in internationally recognized journals will only increase as university performance measures are heavily oriented towards quantitative indicators, such as grants or publication and citation count, rather than qualitative ones. So, despite the fact that different universities have different profiles, missions, and aims, there is no choice given: publish or perish!

## Introduction of Impact-Factor Publication Requirement for Faculty Promotion: Case of Kazakhstan

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One of the many challenges facing the educational system of contemporary Kazakhstan is the low level of research capacity among university faculty. Prior studies (Kuzhabekova, in press a) clearly show that Kazakhstani researchers produce a negligible number of articles in internationally recognized journals, and the articles that they do produce are not cited. In addition to that, most of the scholarly works by Kazakhstani authors which are included in international databases appear in predominantly Russian-language journals or in journals published in the countries of the former Soviet Union, which do not have a high impact compared with their counterparts from far abroad.

Viewing research and innovation as key ingredients of economic growth, the government of Kazakhstan has implemented a number of focused initiatives aimed at strengthening the country's research capacity, including the development of university faculty's individual capacity. In order to stimulate greater scholarly research and publication activity by faculty members and to encourage university research, the government of Kazakhstan has recently introduced an impact-factor publication requirement for promotion to higher academic ranks.

In a recent study (Kuzhabekova, in press b) carried out in order to inform policymakers about the effectiveness of introduction of the impact factor requirement we conducted a survey of university faculty. The online survey was conducted among 170 faculty members from six universities in Kazakhstan, including two national level public universities (Eurasian National University, located in the north, and Kazakh National University named after Al-Farabi, located in the south); two regional level public universities (East-Kazakhstan State University, located in the east, and Kostanay State University, located in the north); as well as two private universities (Karagandy University of Business, Management, and Law, located in the center, and Atyrau Engineering and Humanities Institute, located in the west).

Our research aims were: (1) to determine the extent to which the new requirement has been incorporated into university promotion and reimbursement policies; (2) to identify the difficulties that faculty face in producing impact-factor publications; (3) to find out what strategies faculty use in order to increase the likelihood of publishing in impact-factor journals; and (4) to reveal the perceptions of faculty members about the effectiveness of the impact-factor publication requirement in raising the research capacity of individual university faculty.

With respect to the first research question, half of the respondents reported that in their universities the impact-factor publication requirement had been incorporated into salary schedules. Specifically, publishing articles in impact-factor journals was said to be directly related to salary increases. About 18% of the respondents mentioned that impact-factor publications are directly linked to promotion in their universities. About 7% of the participants mentioned that inability to produce impact-factor publications can lead to having one's contract terminated.

Speaking of the second research question, we found that one of the main barriers preventing faculty from publishing in journals with an impact factor is lack of access to research funding. This barrier was acknowledged more often by researchers in social sciences and humanities, which are not considered to be areas of strategic importance by the government. Other barriers include lack of access to research facilities and equipment, lack of sufficient methodological training and skills to be able to contribute to international scholarship, as well as lack of access to research software and library databases, lack of time to conduct research due to high teaching and administrative load, insufficient command of the English language or lack of resources to purchase access to editing and translation services.

Regarding the third research question, we found that faculty use a variety of strategies to succeed in publishing in journals with an impact factor. The most important one focuses on improving one's proficiency in English. Many faculty also try to familiarize themselves with the most significant theories and frameworks, as well as with methodological approaches and tools used in the international research community by conducting extensive literature reviews or attending specialized methodological trainings and workshops, including online courses. In addition to that, faculty members try to learn more about the process of preparing publications by attending seminars on publishing in Western journals or by seeking advice from their colleagues from the West during international conferences. Others try to establish long term collaboration with internationally recognized researches. Over 50% of the researchers used specialized editing and translation services to improve the quality of English in their articles.

While the majority of the respondents indicated that they never plagiarize, and it seems evident that most of them take true and honest efforts to publish abroad, a small number of faculty do resort to questionable practices, such as paying for publication or paying other people to produce publishable articles, as well as using junior researchers as co-authors to increase the likelihood of publication.

Positive effects of the policy indicated by the respondents include: (1) increase in the extent of collaboration and in-

ternational partnership among university faculty; (2) creation of incentives for research and development; (3) improvement in research training at graduate level. However, the policy also has produced some secondary negative effects. The respondents claimed that the new requirement had stimulated brain drain from universities and made academic career less attractive for university graduates. The policy also stimulated interest in the development of English language skills among researchers.

Our study concludes that the introduction of the impact-factor publication requirement has produced some positive effects on the development of individual research capacity in Kazakhstani universities. However, this measure alone is not sufficient in terms of increasing research output and quality. Faculty need to have access to proper research facilities, equipment, libraries, and financial resources. Most importantly, they need to have at least some time free from teaching and administrative responsibilities to be able to conduct serious scholarly inquiry.

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#### Can Efforts to Raise Publication Productivity in Russia Cause a Decline of International Academic Periodicals?

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My argument in this piece is simple. The attempts to use publication indicators as a measure of academic performance are to a considerable degree to blame for the miserable state of Russian scholarly periodicals. The recent turn to international publications as an alternative measure was largely a gesture of despair on the part of academic administrators — an attempt to transfer the evaluation function, which Russian journals were unable to perform properly, to presumably more reliable international editions. The problem arising at this point is that such turn puts the latter under the same pressure, which has previously corrupted the former. One can wonder if similar process of decay may be repeated now on a global scale.

Academic publications perform two functions. They serve as vehicles for communicating ideas and as filters signaling which ideas are worth communicating. In the latter sense, they also signal of individuals who have valuable ideas. Too intensive use of the system of academic periodicals for fulfilling the signaling function, however, may lead to the loss of its ability to perform both of them. To increase the chances of seeing their name in print, individual scholars might do more research — and this is the reaction usually hoped for by administrators. Regretfully, this is not the only consequence stimulation of publication productivity can bring. Most obviously, it creates an overload: everybody is trying to publish as much as possible, reducing the content to the minimal publishable unit and, if circumstances permit, autoplagiarizing. This lowers average quality of publications, at the same time greatly increasing their quantity, and thus inhibits navigation through the literature. What is even worse, it creates a general feeling that as far as publications are concerned, "anything goes." [1] What may be equally damaging, it incentivizes collusion between authors and editors, with editors trading publication space for some kind of benefits. Ties with journals may be sought after for apparently benign reasons, which, however, can also lead to deteriora-

tion of the journal system as a whole. With one's career prospects and a significant share of one's income depending on publications, one is interested in making his or hers path into print as smooth and predictable as possible. On a brighter side, that may result in an optimal match between journals and authors with authors submitting their texts to the journals which are most likely to accept them. In an ideal case, this matching helps maintain thematic profiles of journals and create a hierarchy of quality. However, there are dangers too. Put under publication pressure, authors prefer journals which can guarantee that their texts will be published in time. This preference is clearly incompatible with the very idea of blind or double-blind peer-review, which is by its nature a highly unpredictable process. Pressure to publish makes the costs of the matching process based on blind peer review enormous. Tactics to cut down these costs include, first of all, practices of soliciting papers when editors go searching for suitable texts. For authors, an invitation means a guarantee that their text will be accepted. For the scholarly community, though, the fact that editors' taste, rather than advice from anonymous reviewers, stands behind the distribution of publication space creates the risks of dependency on idiosyncratic whims of powerful individuals who may be also tempted to use their position to strengthen their own patronage networks.

The history of the Russian academia provides a few examples of the consequences that might follow. Russia can arguably be considered the country where quantita-

tive performance indicators based on academic publications were invented. University professors were obliged to publish a piece every year as early as the 1830s, and the members of the Petrine Academy of Sciences faced such a requirement even earlier. In the early XIX century those occupying certain positions were either obliged to produce a certain number of publications (a predecessor of the "efficient contracts" of our days) or paid bonuses for each on a piecemeal basis. The practice continued through most of late imperial and Soviet history. Performance requirements themselves survived in the laissez-faire atmosphere of the 1990s: anyone holding an academic job was to produce a certain number of publications — but control over their implementation was nearly abandoned. In many universities that meant that the requirements and recommendations of the Ministry were simply ignored but most reacted more cautiously. Instead of challenging the Moscow authorities, universities demonstrated compliance by starting series of periodicals called "Proceeding of university X" (Vestnik universiteta) subsidized from the institutional budget and publishing the university's faculty only. Such periodicals never reached any of the distribution networks. It was common to regard such editions as maintained solely for the benefit of the faculty of respective institutions. Outsiders, if they wanted to submit an article, were either rejected or requested to pay a sizable fee. In addition to such institutional journals, some periodicals were printed by commercial publishers ready to accept anything for a charge. At least 90% of all allegedly academic periodicals existing in the first half of the 2000s belonged to one of these two categories. Along with them, a handful of mostly Moscow-based periodicals with wider readership existed. They were ruled by autocratic editors and often published predominantly members of their close circle — an inevitable result of the practice of soliciting papers.

Partly as a recognition of the inability of Russian journals to play the role of gatekeepers putting the seal of research quality, the Ministry of Science and Education turned to international science as a source of unbiased judgment. There were even rumors of making international publications a necessary condition for obtaining a degree (policy which was implemented in Kazakhstan some time ago). Obviously, the government's attempts to internationalize Russian science had many reasons, of which the desire to get Russian universities into international rankings was probably the most important. But the Ministry demonstrated preference for foreign experts before the positions in rankings were adopted as the central success indicator. The reason given by senior officials behind the scenes was that the Ministry wanted to capitalize on the continuing isolation of post-soviet science. While collusion was likely within the country, few cliques had international connections and could collude with foreigners.

A common reaction on the part of academics was to search for connections with international editors and other academic power brokers. Those who were regarded as accessible and potentially helpful were courted, and their readiness to pay back with positive evaluations for whatever benefits they received tested. In the most infamous episode

occurring so far, international scholars visiting one of Russian university cities were notified that their travel and accommodation would be paid for if they would promise to evaluate the host university favorably during the next reputation survey. Overall, the most visible reaction to ministerial attempts to internationalize Russian science manifested itself in attempts by academics to export the practice of collusion outside of Russia.

Was the prospect of world-wide export of practices characteristic of Russian scholarship realistic? There is some good news and some bad news. The good news is that Russian academics are too few and not resourceful enough to make a difference globally. Colluding requires providing something in return for compromising academic integrity — and here Russians simply do not have much to offer to more than a handful of academic tourists agreeing to patronize them. As far as publications are concerned, there are a few documented cases of establishing partnerships with editors of important journals that resulted in emergence of various thematic issues which allowed to bypass the more unpredictable regular submission, but this cannot be considered a big impact on the system of periodicals in general. Unless Russian academic market becomes significantly more important globally, it is hardly a major threat to international academic virtue. The bad news is that scholars all over the world experience similar pressure, and while Russia may have a dubious honor of being the first to suffer the consequences, it will probably not remain the only one.

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[1] We are not discussing here other costs of publication pressure, such as alleged loss of originality as a result of desire to make a paper a hundred-to-one stake.

# Under Pressure: Transformation of Academic Work and Discourse in a Globally-Oriented Russian University: Case of National Research University Higher School of Economics

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Pressure pushing down on me, Pressing down on you, no man asked for [1]

The Russian government has recently launched a national academic excellence project that aims to enable a handful of leading universities to take positions in top-100 of the global rankings by the year 2020 (The 5-100 Project). Fifteen and, later on, six more universities selected to participate in the program have already received or have a chance to receive extra funding and are expected to perform better in the global education market. Having more resources, these institutions have realized the necessity to strengthen their teaching and research functions with a special stress on the latter. Institutional consequences of this academic excellence initiative are widely discussed but what happens to academics within these institutions? The most straightforward aftermath for the faculty at participating universities is higher pressure to publish and, moreover, to publish internationally. Thus, the motto "publish or perish" that has been working the academics' nerves for years already is nowadays more then relevant in Russia's leading universities. Basing on the data of the annual faculty survey conducted at Higher School of Economics and the analysis of public debates reflected in the media and on Facebook, we make an attempt to reveal the changes that are happening to HSE faculty under pressure to publish. Generally, the academic world has reacted to this pressure with the discourse of alarmism, which is characterized by sentiments predicting the decline or even immediate death of the academic life. The fact that a large proportion of faculty share and represent such views in public discussions is not entirely new but alarmist discourse is getting more and more robust. Publishing issues are an essential part of this discourse. There are at least three typical complaints voiced by faculty. First is that academics are expected to show high productivity in compressed times frames, although "good scholarship requires time" [2] and the term "productivity" itself is inappropriate for traditional university life. In a certain sense, it sounds like a slightly naive call for professional autonomy to stand against the invasion of managerialism in academia. Then follow complaints against the spread of bibliometric indicators as measures of scientific outcomes. The relevance of international citation databases is questioned. The ways bibliometry is employed to account productivity are challenged. The third kind of grievance represents the voice of "pure" teachers whose professional identity doesn't include research and is limited to transmitting knowledge. They point out that good teaching should be appreciated no less than research. Government officials, university administrators and even other academics that support transformations try to respond to these complaints. However, alarmism persists and, in our view, is even growing, which means that the communication between the supporters of different views is failing.

Alarmism, which obviously opposes the policies focused on enhancing publication activity, doesn't mean that faculty don't change. The case of Higher School of Economics (HSE) shows that the pressure to publish has its impact on academic life. Specifically, some faculty start changing their professional tracks and try to conform with "publish or perish" policy requirements. At HSE there are three ways through which this policy operates: 1) publication activity assessment, 2) a system of differentiating wages according to publication results, 3) publications outcome is a criterion taken into consideration while renewing faculty's contracts.

Faculty survey at HSE contains questions about working time budgets and priorities in professional life. The results show that half of those in teaching positions spend more than 25% of their working time on research. [3] Moreover, the share of instructors who stated that research is their professional foreground grew from 26% in 2014 to 41% in 2015, while the same indicator for teaching decreased from 67% to 51%. The majority (87%) of faculty who would like to change the structure of their working time budgets in the future said that if they did change it, they would spend more time on research. The percentage of teachers who participated in research projects has risen from 68% to 79%. In other words, academics who used to be focused primarily on teaching are turning towards research, thus leaving teaching behind. Such reorientation towards research is more prevalent among male faculty (84% of them participated in research projects) than female (74% of which participated in research projects), among academics with less teaching load (with 86% of those who participated in research projects among teachers with fewer than 50 contact hours in the 2014-2015 academic year), and those with a post-graduate degree (83% of them participated in research projects in comparison with 69% of the teachers without a post-graduate degree).

However, not everyone wants changes in their professional life. Around 20% of the faculty spend more than 80% of their time on teaching and therefore don't engage in research much and don't show high publication activity. A curious fact is that this subgroup differs a lot from other faculty in terms of their professional attitudes. For instance, comparing with other groups, divided on the basis of their working time budget structure, faculty who are primarily teachers (>80% of time spent on teaching) are distinguished by the biggest share of those who are dissatisfied with their income and who are planning to change their workplace. At the same time, they stand out as a group due to the lowest percentage of those who plan to publish in international journals and who understand the university's strategic goals. This group seems to be

a bit lost in the changing environment and, at the same time, a bit rebellious, comparing to their colleagues who more or less accept the rules. This draws another line between them. In the survey, there were questions aimed to explore attitudes towards possible sanctions against faculty who don't fit the minimum criteria of publication activity. Academics with different working time budget structure show different attitudes to the idea of sanctions. Usually those who spend most time on teaching are more critical, while those deeply engaged in research often support the idea of sanctions. In our opinion, it can be interpreted as a polarization between two professional subgroups: "high-flyers and underdogs," [4] or conformists and rebels. Pressure to publish contributes to the institutionalization of the role of underdogs at Russian universities not only by establishing certain rules but also by creating new incentives for faculty differentiation.

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## Return on Publications (RoP) and the Changing Nature of the 'Science Enterprise'

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#### Publishing, Access and Data: An Overview

These days everything, including publishing and science, is about data. Here is a highlight. On January 7, 2016, at Orthodox Christmas day, ORCID, a US (Delaware-based) corporation which holds open-access registry of unique identifiers for individual authors and their publishing activities officially announced that seven influential society publishers will start requiring ORCID identifiers from their authors [2]. The pioneer of this next deep digitization step — The Royal Society (UK) — was already at the forefront of

the effort, requiring all authors to use their new 'digital passport' in form of ORCID iD as of January 1, 2016 [3].

Putting this to a perspective, today's headcount of ORCID is nearly 2 million authors representing 200,000 organizations globally. If we compare this number to the 7 million individuals cited in Knowledge, Networks and Nations (2012) [4] as the global population of researchers and assume that figures and statistics always have shortcomings, the scale of science turning to "e-" is both big and fast. Next to this comes a variety of free access data on funding activities and research funding flows both at source and recipient levels, accumulated at the same time.

These orchestrated steps are fundamentally changing the science and education landscape, where publishing, citations, and accessibility of information plays a key role in resource distribution. If we couple ORCID initiative with projects like the UK-led 'snowball metrics', already marketed as 'global standard in institutional benchmarking' as well as various science networking portals, which you may google just as easily as any other information, the trend becomes clear. After having gone digital, the science and education enterprise is quickly polishing itself to apply business principles to all the aspects of science. It is especially true in decision-making and managing research, researchers themselves, and their publications (Green 2015) [5].

The impact of these steps on how researchers will publish and how their work is going to be measured (and funded) is significant. It will encompass several dimensions, ultimately changing publishing and science as we know them today. I would like to touch on a link between funding and publications, which, in my view, will be seriously affecting science and education in our country. Scarce resources will not only dictate the subject areas where funding flows will go but will also affect academic publishing practices.

#### **Science Economics and Return on Publications**

If we look at science from an economic perspective, the core of governmental decision-making is focused, subject-specific areas in science and education as well as publishing about them. It all revolves around resources and ROI (return on investment), or let us call it RoP ('return on publications'): whether it is open access or subscription and whether it is an individual researcher or an institution. As soon as all authors are linked to a global 'system' whatever that 'system' or 'network' will be - funding flows, both national and international, will concentrate immediately in those centers and individuals, where not only quantity but quality publications will drive knowledge advances and attract more networking, talent, and resources to support it. The funding flows are currently also on a trajectory towards being linked into a clear systemic way to authors' and articles' various electronic 'passports'. Once the circle is complete, all the activities will be measurable and transparent from a formal standpoint, leaving not much space for the good old free academic endeavor. Pressure for public and private funds and governmental budgets, which feed science and education both in our

country as well as internationally, is growing. Researchers will need to show proper RoP, coupled with the right publication impact, most of which is already in the KPIs of their respective institutions (universities and research institutes). It is not only publishing, however. Another survival strategy, which the new publishing and science funding order is steering the authors to, is actually marketing one's own profile on the digital arena. Contemporary researchers will have to be well-versed not only in their actual subject areas but also in selling what they do and who they are to the world. For some this could be a down side of changing 'science' to the business of 'science enterprise'. There is no secret that publishing in international journals determines the face of organizations in the world of university.

termines the face of organizations in the world of university ranking as well as in the effort of attracting new talent in both education and research. It also determines how well organizations are funded and it holds true in our Russian universities, just as much as in the universities of Asia Pacific, Middle East, Europe or South America. The prevailing approach is unified and simple, right to the bone: publish or perish.

#### **Reality Validation**

Such approach has both positive and negative consequences, many of which are often shared by the participants of the 5-100 Project (Russian academic excellence initiative). Let's take Russia's flagship university in the Asia Pacific: Far Eastern Federal University (FEFU). On the one hand, positive visibility of FEFU research output indexed in global databases, such as Scopus, has increased dramatically in the last 5 years (numbers vary slightly): from 142 in 2011 to 600+ in 2015. On the other hand, the pressure on the researchers to publish has been enormous within the university. What adds to the complexity is the unification of four universities into one in a very short period coupled with a very low start in publishing, especially in internationally indexed journals. Here are the key contributing factors:

- 1. Introducing publications quotas as part of effective contracts and KPIs for researchers and faculty.
- 2. Financial motivation for FEFU authors publishing in Scopus-indexed journals (first without considering journal impact factor). This initiative resulted in intensified collaboration with various institutes of the Russian Academy of Sciences and discipline of naming the correct affiliation. This initiative alone helped double the university's publication count within 12 months.
- Next step was to motivate FEFU faculty to visit and publish at the international conferences, whose proceedings are indexed in Scopus. This approach also provided for a roughly 30% increase in international scholarly output.
- 4. To support the publishing process, Center for Publishing was created to fully support authors in every step of the process: from language editing to communication with journals and editorial boards.
- 5. Reputable in-residence foreign professors and researchers were invited to help organize local centers of competencies and instill international experience at the university across various subject areas.

6. Finally, to transform quantity into quality, the motivational program for publishing was updated to dramatically increase financial remuneration for publications in high impact-factor journals and, at the same time, severely decrease motivation for publications in lower quality journals. The latter allowed to address another challenge: the number of citations for published papers [6].

All of these steps required resources and effort. Both the university and the government are looking carefully at how publications help bring about the return on publishing and, ultimately, return on investing in science and education from every ruble. Going forward, I see the existing model of publishing is rapidly changing in very practical terms. Academic publishing which lets researchers submit articles for free and then charge the reader is no more sustainable neither for resource holders with public funding, nor for researchers, who need faster time-to-market, as the speed of information exchange increases. 'Publish or perish' seems to be destined to become more than just a slogan but rather a matter of survival for both organizations and individuals in this new academic landscape.

#### **Publish or Perish: Questions for the Future**

I would like to finish this brief outlook with a number of questions that require further discussion.

- If publications rapidly move to the open access format, is it so necessary to turn good Russian journals into English language journals or would it suffice to make them bilingual?
- If funding bodies and publishers determine the 'system' in which every researcher has an 'electronic passport,' is there space for free scientific inquiry, not being steered to the topics where resources are focused?
- How does the need for publishing / publishing KPIs relate to experimental sciences and engineering, where the ultimate output is not a piece of knowledge (article) but a piece of working technology or innovation (prototype)?
- Are we in Russia ready to follow the global trend and create an environment where not publishing will mean perishing in the new digital 'science enterprise' with business KPIs in place, where decision-making on resources and priorities is determined by formal parameters?

Answering these questions will help us succeed in the institutional reform as well as make sure that perishing is not one of the choices we all have.

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Like academics in leading universities around the country, scholars at TSU are facing the challenge of producing more publications in international journals indexed in Scopus and Web of Science. Although some of them have always published in such journals, especially in such fields as physics, now the scope of both subject areas and authors is expected to widen and to include social sciences and humanities, where the traditions of publishing in international journals have had less time to develop. Throughout the university, people who are extremely occupied with teaching, research, and administrative duties have been taking on a formidable new area of work — one that is at once so important and so complex, both because of the current environment around scholarly publishing and because of language.

#### **TSU Approach**

TSU's fundamental approach is based on a comprehensive strategy which addresses both the politics and practical realities of the current situation and provides a set of tools and resources to improve every employee's publication activity. The elements of our strategy include:

- 1. promoting personal responsibility of project managers for the publication activity of the employees of laboratories, projects, and research centres;
- establishing publication count as an explicit indicator for research labs and other units receiving special support from TSU;
- paying increased rewards for published articles (we have observed that while most scientists very much wish to write about their topic in order to produce a publication, the payment is a modest recognition of the time and effort involved in doing so successfully internationally);
- 4. investing significant resources into subscriptions by TSU Scientific Library, so that access to Scopus, JSTOR, other electronic databases and libraries, and full articles in journals by most major publishers are available to all readers, also through remote access (especially important because the most fundamental challenge for any author is to have read and analyzed what has been published internationally on the topic in order to contribute something slightly new);
- 5. sponsoring seminars and master classes on scholarly publishing (17 in 2013-2015 attended by nearly 900 people), some of them led by representatives of Nature, Oxford University Press, and other major scholarly publishers; and
- 6. prioritizing financial support for academic trips abroad to those who have publications.

In addition, in 2013 a course was launched that is now in its sixth semester, titled Academic Writing for Publication. Developed and taught by a native English speaker and UC Berkeley graduate, AWFP involves using primary sources such as the Publication Manual of the American Psychological Association, The Chicago Manual of Style, and the New Oxford Style Manual; finding and evaluating journals and articles; understanding the Committee on Publishing Ethics (COPE) International Standards for Authors and related practices; developing and writing articles in English for target journals.

Originally most course members represented social sciences and humanities; since 2014 up to 40% of the audience come from other fields including the physics. For those in social sciences and humanities, course work stresses knowing about relevant journals, finding target journals, determining an appropriate topic, research needed, and research methods and presentation, and learning article structure and organization.

AWFP instructor is freely available to current and previous course members and any TSU staff for consultations either in the office or by email/Skype. MA, PhD, or doctoral students may request such consultations, which are very much in demand, too, for individual work on developing and presenting articles and other kinds of academic writing in any field. The instructor also consults with the members of the Department of Foreign Languages, which has been holding English classes and special schools for

faculty and staff (about 300 last semester, for example). These classes in turn have resulted in more people with a level of English that enables them to participate in AE and AWFP, and consider reading and possibly writing English-language articles.

The instructor also monitors the overall publishing situation in a variety of ways, including publication activity in the country; from time to time the instructor sends around memos and short reports on topics of importance. We also make use of publishing advice from members of our International Academic Advisory Board.

All of these elements and activities have as their backdrop the tremendous growth and development of TSU as it carries out its Roadmap 2020, and especially, the internationalization of the university. In the past several years, TSU has become home for five Centres of Excellence and numerous laboratories and special projects across various fields. Large-scale international joint projects are being carried out, including TEMPUS TACIS, INTAS, ATLAS, INTERACT, ERASMUS, etc., involving universities, scientists and scientific institutions, and others throughout the world. This collaborative engagement has expanded TSU faculty's opportunities to do research, to be in an environment where international publications in English are the norm, to have their results in demand, and to work with co-authors, some of them from abroad.

#### Challenges, Opportunities, and Results

Reviewing all the items by TSU authors that are indexed in Scopus for the years 2013, 2014, and 2015 is the most explicit way to understand how the elements and activities and the overall situation played out in publication activity across various fields during those years, and to try to see the realities, trends, and future prospects behind the numbers. Here is a summary:

- In 2013, 504 items with TSU affiliation were indexed in Scopus and Web of Science, either or both but with no duplication. 444 of these are reflected in Scopus.
- In 2014, 1,426 total items were indexed, with 1,179 of them reflected in Scopus.
- In 2015, 1,511 total items were indexed, with 1,452 of them in Scopus.

This growth in scope and numbers may reflect the upswing in incentives and opportunities for TSU researchers combined with the kind of options that are observed when authorships and publication sources are reviewed: research may be in demand as part of an international group co-authorship; physicists have the option of publishing in international English-language journals that translate articles professionally if accepted (thus freeing the scholar to do research!); in physics and some other fields such as computer science, one can also publish an article in a conference-based journal that is indexed on Scopus. (In 2012, Elsevier removed its own Procedia–Social and Behavioral Sciences from coverage and now it is no longer accepting proposals; these conference-related options are almost non-existent in social sciences and humanities.)

In addition, although separate analysis would be needed to show it, it is not difficult to think that the recent world-wide increase in peer-reviewed, indexed open-access journals (some of them with modest author fees to be paid once one's article is accepted) has an impact on the options available to researchers. While none of these options accounts directly for all the increases that occurred, even in a given subject area, it seems that they have indeed played a significant role.

In social sciences and arts and humanities, there appear to be some other kinds of options. In 2013, 14 items were indexed in social sciences and 10 in arts and humanities; in 2014, 62 and 19 respectively; and 83 and 82 in 2015. Their authors had an opportunity to publish in several Russian-language journals with English abstracts, which account for many of the items indexed. At the same time, it is impossible not to notice that a number of articles in other fields are cross-listed in the listings for both social sciences and 10 in arts and humanities.

Finally, we would like to note two things. First, our experience shows that most articles that have been translated are rejected, often without a review, because of great differences in academic style between Russian and English. This is most likely to occur in social sciences and humanities, it seems, and this is another reason why we have focused on people learning to work directly in English to express their ideas. The other is the matter of predatory "journals" and well-known websites that will post non-peer-reviewed articles on any topic for a fee and thus generate thousands of items on the internet which may seem like academic publications. Nowadays, with thousands, if not millions, of academics around the world desperate to "publish or perish," such websites are flourishing and becoming more sophisticated in targeting academics. Since some of them find even their way into Scopus (only to be discontinued later), we encouraged people to learn to spot fake journals and not to be tempted by them for the sake of their own and the university's academic integrity. To the best of our knowledge, fewer than 15 "articles" were "published" on such websites by TSU authors in 2013-2015.

It has turned to be extremely worthwhile for us all to see the research and ideas of our scientists and scholars, so many of whom are passionate about their topics, communicated effectively to a world audience that is receptive to them.

#### **About HERB**

Higher Education in Russia and Beyond (HERB) is a quarterly informational journal published by National Research University Higher School of Economics since 2014. HERB is intended to illuminate the transformation process of higher education institutions in Russia and counties of Eastern Europe and Central Asia. The journal seeks to adduce the multiple-aspect opinions about current challenges and trends of regional higher education and give examples of the best local practices. Our audience represents wider international community of scholars and professionals in the field of higher education worldwide. The project is implemented as part of cooperation agreement between Higher School of Economics and Boston College Center of International Higher Education.

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