

# Interprofessional and Interdisciplinary Relations in Russia: Zones of Collaboration, Competition and Conflict

## Abstracts

### Keynote Lecture

Steve Fuller (University of Warwick)

#### ***Russian 'Cosmism' as a Potential Inspiration for Twenty-First Century Interdisciplinary Work***

Much of what is normally seen as Russia's distinctive contributions to the West's intellectual heritage have been profoundly interdisciplinary in character, typically with a broadly understood 'instrumental' orientation. Consider Vygotsky's praxeological social psychology, Soviet-style cybernetic economics, and TRIZ (Altshuller's 'theory of inventive problem solving'). However, perhaps the most signature contribution – and the one with the longest half-life – may be 'Cosmism', a heterodox development of Russian Orthodox Christianity, stemming from the philosopher Nikolai Fedorov, who argued on theological grounds that science should aim to make all humans – both living and dead – immortal by acquiring control of the mechanisms of heredity. A weak version of this proposal informed Theodosius Dobzhansky, an originator of the Neo-Darwinian synthesis, but also a Ukrainian Orthodox Christian influenced by the heretical French Jesuit palaeontologist, Pierre Teilhard de Chardin, who proposed the idea of the 'noösphere', a kind of cosmic consciousness that was an emergent effect of mass communications and the sheer physical dominance of humanity on the Earth. Teilhard himself had been influenced by another Cosmist, the geochemist Vladimir Vernadsky, the main early Soviet booster of nuclear energy who is now seen as an anticipator of the current idea of the 'anthropocene'. But the Cosmist who left the deepest impression on Soviet thinking was the astrophysicist Konstantin Tsiolkovsky, an inspiration for Sputnik, who presented interstellar travel as breaching the final frontier of humanity's quest for cosmic consciousness. Today such ideas are most explicitly pursued by transhumanists who believe that an expansion of our cosmic horizons is not merely desirable but required for humanity's survival, should it turn out that one or more global catastrophes prove that our stewardship of the Earth has been a failed experiment. I shall discuss two issues related to this development: (a) the role of theology as the site for exploring interdisciplinary synergies; (b) the prospect of a 'transhumanities' as a 21<sup>st</sup> century style liberal arts that sees the scope of the human condition extending – and perhaps not even relying on – planet Earth.

### Panel I: Writing

Octavie Bellavance (Yale University)

#### **The Pre-Revolutionary Russian Newspaper as an Interprofessional Institution**

This paper argues that the Russian newspaper between 1861 and 1907 functioned as a zone of both multiprofessional and multidisciplinary encounters. The newspaper was firstly multiprofessional, as it relied on contributions from non-professional journalists. Despite the rise of the 'career reporter' from the 1870s onward, most of the editorial content of Russian newspapers was produced by part-time writers, whose journalistic activities complemented their work as physicians, lawyers, academics or even civil servants. The historiography on late Imperial Russia has attempted to cast journalism as one of the professions, whilst acknowledging the high incidence of casual contributors from other professional groups. This paper is the first study of professionals' contributions to the daily press in this period. The paper also examines the daily press as a forum for multidisciplinary encounters. It argues that newspapers enabled professionals to share their expertise not only with the broader public, but also with members of other professions, especially in response to public health crises or broader socio-economic issues. Contrarily to specialised publications, the general press used non-technical language and reached members of all professions, thus fostering collaboration between professional corps. Finally, the newspaper underpinned interprofessional and interdisciplinary work in pre-revolutionary Russia by connecting all other institutions in which professionals operated: institutions of higher education, scientific and professional societies, urban and rural local self-government, and civil society organisations.

Sergey Tyulenev (Durham University)

### **Translating and Original Writing: Some Reasons for Cross-Professional Involvements**

This paper will focus on the cross-professionalism of original writing (writers and poets) and translation (translators) in early Soviet Russia. In that period these two activities had become more or less clearly defined professions: there were those who earned their living by original writing and those who translated. The Union of Writers and the Union of Translators of the USSR were separate organisations. Publishing houses distinguished between translators and writers. Yet in certain publishing projects, such as translations or re-translations of world literary classics in the publishing houses Academia and in Maxim Gorky's project 'Vsemirnaia literatura' (World Literature), writers were recruited in the capacity of translators. Writers were also involved in translating folklore or literary works of the former Soviet republics and minor Soviet nations. There were several reasons for this cross-professionalism: on the one hand, the projects gained prestige thanks to first-calibre writers participating in them; on the other hand, especially for ideological reasons, for the writers that was the only opportunity left to publish and sometimes make a living. The writer-translator cross-professionalism played out in the other direction as well. Some translators passed off their own creations as translations. In this context the paper will look into the case of Vladimir Lifshits who published pseudo-translations of a British poet James Clifford, whom he himself had invented.

Henrietta Mondry, University of Canterbury, New Zealand

### **Cosmists-Immortalists, Experiments on Dogs, and Bolshevik Science and Fiction**

In the Russian cultural landscape of the 1920s, matters of life, death and immortality formed a distinctive zone of multiprofessional and multidisciplinary intersections and interactions. Biomedical science was actively patronised by the new Soviet state, while laboratory scientists were conducting experiments that were at the same time the subject of pre-Revolutionary philosophical discourse, thus showing the cultural continuity. Laboratory experiments also created two-way traffic with works of literary fiction. In the 1920s, the interests of some writers openly corresponded to the subject of scientific experiments on rejuvenation, sex change and the reanimation of animals and humans. The manifesto of a group of writers known as the Cosmists-Immortalists proclaimed the conquest of death by science to be a human rights issue. While experiments on animals for the advancement of human medicine were considered unproblematic by this group of atheistic representatives of the profession of creative writers and artists, experimental science was treated with suspicion by some of their religious counterparts. Yet, so strong was the desire to conquer death and achieve immortality that this area created a domain of intersections of opposing philosophical and ontological worldviews. This paper will explore this domain of overlapping, competing and conflicting ideologies and opinions, and show that the sheer magnitude of the task created a zone of fuzzy borders, rendered such by the masquerading techniques and concealment tactics used by various participants. The surgical experiments on dogs in the literature of the 1920s – Bulgakov's 'Heart of a Dog' and Aleksei Tolstoi's *Youth Factory* – will be reread as examples of such deliberately confusing tactics. The paper will argue that it is misleading to read this fiction as a polemic with Bolshevik science. This kind of writing should be seen as the grey zone of intersections between scientific utopianism, religious and atheistic cosmism, and biomedical laboratory experiments, based on the work of such diverse players as the philosophers Nikolai Fedorov and Vasily Rozanov and the physiologists Ivan Pavlov and Sergei Briukhonenko.

Tatiana Sokolova (Higher School of Economics & Institute of Philosophy, RAS)

### **Scientist as Fiction Writer: Soviet Science-Fiction and Space Exploration**

The success of the Soviet space programme (Satellite-1, the first man in space, and the first man in open space) are often considered to be the consequence of the arms race during the Cold War. This paper will aim to show that, at the ideological level, these successes were based on the synthesis of two seemingly contradictory philosophies: on the one hand, the philosophy of Russian Cosmism (especially in the version propounded by K. Tsiolkovsky), with the idea of man's responsibility before all rational beings in the universe; and, on the other, the Marxist thesis about the elimination of the gap between manual and intellectual labour. Such a synthesis was possible thanks to the general orientation of both Marxism and Cosmism to build a new society organised on scientific grounds. Such a society demanded a new type of man, who did not only have advanced technical skills and scientific knowledge, but also had particular moral qualities, such as strong faith in humanity, readiness for self-sacrifice, and the courage to explore outer space. These qualities, as well as highly sophisticated (yet nonetheless fantastical) technologies, were brought together in the science-fiction literature written by Russian scientists (including K. Tsiolkovsky, A. Beliaev, I. Efremov and many others), who in such works did not confine themselves to the simple

popularisation of the hard sciences. Inspired by Tsiolkovsky's ideas, Soviet engineers and scientists (F. Zander, Y. Kondratiuk, S. Korolev and others) opened the new era of USSR's space exploration. Thus, the paper will examine the interaction between philosophical ideas and technical achievements based on an analysis of Soviet science fiction literature from 1920s to 1957 (the year of the launch of Satellite-1), as well as of its critics from the scientific community.

## Panel II: Humanities

Maxim Demin (Higher School of Economics)

### **Beyond Discipline? The Professionalization of Academic Philosophy at Russian Imperial Universities**

As the modern academic profession grew and developed intensely in the second half of the 19<sup>th</sup> century, philosophers in the university system were being transformed from general intellectuals to narrow specialists. By the same token, university philosophers now had to work harder to prove the public benefit of their professional expertise and to raise the prestige of their specialist academic knowledge in the wider society, not least in relation to and distinction from the expertise of other emerging and differentiating disciplines within an expanding academic system – disciplines that were also making their own competing claims in this broader realm. This paper will explore how a newly professionalizing community of academic philosophers based at Russia's Imperial universities tried to extend its relevance by complicating its own disciplinary structure and by creating a system of professional journals and associations strategically with the support of academics from other disciplines. This led to processes of both internal differentiation and disciplinary hybridization. The way in which psychology, in particular, developed within academic philosophy as a conflicting arena of professional and disciplinary encounter is particularly pertinent with this regard. This paper will study the above issues primarily by examining the strategies through which some of the most important figures of professional philosophy at Russian universities in the last third of the 19<sup>th</sup> century (Matvei Troitskii, Nikolai Grot and Mikhail Vladislavlev) legitimized their academic activities in the context of a rapidly changing institutional, professional and intellectual landscape.

Alexander Dmitriev (Higher School of Economics, Moscow)

### **New Strategies of Interdisciplinary Publishing in Russia on the Eve of the Great War**

This paper will examine approaches to knowledge innovation in Russian periodical publishing in the humanities and social sciences in the early 1910s. It will analyse, in particular, the output of the St Petersburg publishing house 'Education' ('Obrazovanie'). Headed by Gedaliah Abramovich Kotliar, translator and admirer of Ernst Mach, 'Obrazovanie' sought to propagandise cutting-edge scholarly ideas in their original articulation. For this purpose it released dozens of thematically organized collected volumes under the common title 'New Ideas in ... [Physics, Philosophy, Jurisprudence, etc.]'. Translations of the latest Western scholarship were published side by side with original Russian-language articles. Each series was devoted to a major area of knowledge, including the humanities and social sciences. Striking, however, was the absence of collected volumes devoted to such traditional disciplinary formations as 'History' and 'Philology'. This paper will focus primarily on the seventeen issues of 'New Ideas in Philosophy' and the four issues of 'New Ideas in Sociology', all of which came out in the early 1910s. Examined will be the repertoire and character of the topics covered and the range of Russian and foreign authors included. The editorial and translation policy of 'Obrazovanie' will be compared to related contemporaneous publishing projects in the humanities and social sciences – both those that were more traditional, such as the journals *Questions of Philosophy and Psychology* or *Logos*, and those that appeared in the 1910s and that were explicitly devoted to innovation, such as *The Historical Review* (edited by Nikolai Kareev) and *The Russian Historical Journal* (edited by Vladimir Beneshevich). This paper will analyse the way in which all these publishing initiatives articulated and negotiated the restructuring of knowledge about humanity at a crucial intersection between the old (historicist and textual) and the new (social) paradigms.

Dušan Radunović (Durham University)

### **The Emergence of Modern Scientific Communities in Late-1910s and Early-1920s Russia: The Cases of OPOIAZ and the Moscow Linguistic Circle**

This paper assesses the Russian Formalist movement in the light of broader social processes – the loosening of the traditional system of social cohesion, which may conditionally be termed 'the secular modernity'. In the academic sphere this entailed a systemic rearrangement and epistemological reassessment of disciplines in the humanities.

The Formalist conceptualisation of literature as a self-regulated system governed by endogenous processes can be seen as representative of these developments. This paper traces the divergent trajectories of the two main outposts of Russian Formalism: the Moscow Linguistic Circle and the Society for the Study of Poetic Language (OPOIAZ). Once dubbed ‘the single most important assembly of Russian philologists’, the Moscow Linguistic Circle was nevertheless perceived – by the community of peers and the wider public alike – as the less emblematic and socially conspicuous of the two Formalist camps. Pondering upon such an uneven distribution of scholarly prestige between the two branches of Formalism, the linguist Maksim Shapir has suggested that a wider dissemination of ideas advanced by the Moscow Linguistic Circle was impeded by: a) poor access to ‘structural resources’ (publications, the ‘daily life of the science’, etc.); b) the overly formal style of their proclamations (in contrast to the more avant-garde style of OPOIAZ); and c) the conceptual heterogeneity of their ideas. Taking this appraisal as a starting point, this paper utilises the methodological frameworks of the sociology of scientific knowledge (specifically Frickel and Gross’s general theory of scientific and intellectual movements and Nicholas C. Mullins’s four-stage model of scientific group development) to trace and explain: a) the emergence of Formalism as a socially framed epistemological phenomenon; b) the production and proliferation of its ideas in their encounter with competitors’ ideas; c) the stabilisation or decline of the movement; and d) the afterlives of Formalist ideas. The discipline-bound discussion of the Formalist contest will then move to a broader socio-epistemological level, presenting the rapid success of the Formalist call for the emancipation of literary scholarship as commensurate to the emancipation of scientific disciplines and human practices overall, that is, as a phenomenon inseparable from the advent of secular modernity in Russia in the 1910s and early 1920s.

### Panel III: Law

Elizaveta Blagodeteleva (Higher School of Economics, Moscow)

#### **Where Legal Theory Meets Legal Practice: Law Professors and Sworn Attorneys in the Russian Empire**

The paper discusses the interrelationship between Law professors and sworn attorneys (barristers) which were the major professional groups employed in production and deployment of legal knowledge in the Russian Empire after the Great Reforms. It focuses on the areas where their respective professional interests, as academics, on the one hand, and practitioners, on the other, overlapped: firstly, with respect to the training required for the admission to the Bar, and secondly, concerning access to public speaking in the courts. In terms of admission, the Russian Bar differed significantly from other professional occupations. While entry to the medical, engineering or teaching profession depended mostly on obtaining an academic degree in the respective field, the Bar admission requirements embraced a supplementary five-year internship as a judicial civil servant or as an apprentice inside the Bar. Since it implied the idea of ‘tacit’ practical knowledge that one could hardly gain in a classroom, apprenticeship to some extent undermined the Law faculties’ monopolistic position in the production of professionals. At the same time, eminent professors in both civil and criminal law questioned the professional monopoly of legal practitioners and sought opportunities to merge their academic positions with attorneyship. They argued that if academic legal theorists gained access to public speaking in the courts they would contribute greatly to the advancement of legal practice by enriching it with theory. They also contended that this might well promote hands-on education in universities as well as reinforce the legal practitioners’ public profile, which appeared to be in decline. However, neither the barristers’ apprenticeship nor the professors’ demands resulted in noticeable public conflicts between the two groups as both sides tended to collaborate more rather than struggle over professional authority.

Jakob Zollmann (Wissenschaftszentrum Berlin)

#### **Tsarist Russia’s International Lawyers: The Professionalization of an Elite**

The paper will present the professional experience of late tsarist legal practitioners in the field of international law and their interactions with Russian academia, state bureaucracy, and lawyers working in the domestic field. As is well known, Russia under Nicholas II participated in ‘trans-Atlantic’ discussions about the role of international law in the maintenance of peace and the ‘replacement’ of war through the creation of an international court for compulsory arbitration to settle international disputes. These efforts culminated in the Tsar’s proposal of 1898 to initiate an international conference that would set-up the necessary (legal) institutions. The resulting Hague Conventions of 1899 and 1907 are often depicted in an international political context as being motivated by Russia falling behind in the arms race. However, there is a domestic side to this story too that needs to be analysed within the context of Russian legal and academic reforms since 1864: a (slow) process of establishing a group of (elite) lawyers that was not only committed to the ‘rule of law’, but was also able to participate in international debates

and conferences that resulted in major treaties. While much research has been done on this 'auspicious process of modernisation' (most of all on Russia's domestic court systems and legal procedures), the work of Russian legal practitioners on an international scale has been accorded relatively little attention since V. E. Grabar's *History of International Law in Russia, 1647-1917*, (1958; 1990). Nevertheless, William Elliott Butler's recent bibliography on *Russia and the International Legal System* (2006) sheds light on the sheer number of works written by Russian contemporaries that attests to an increasing professionalization in this field (while the reference sections attest to a growing 'Europeanisation' of literature used for one's own academic purposes). This invites for questions on their cooperation among each other and their colleagues more interested in domestic issues (like legal and institutional reforms); on 'learning processes' and knowledge transfer from domestic to international law procedures and vice versa; on interdisciplinary relations within academia and beyond; on mutual exchanges and influences that shaped not only academic discourses, but also political ones, either aiming at societal change in Russia or defending the status quo under the Romanovs. These and related questions shall be dealt in this paper.

Juliette Cadiot (EHESS, Paris)

### **Soviet Lawyers: An Ordinary Profession?**

In the Soviet Union lawyers were members of a bar association. This meant that they were never part of the Soviet bureaucracy. They joined the bar through elections, they were self-organised, they themselves elected the leadership of the bar, and they were paid by their clients for their services. Those who had been lawyers in the former Soviet Union underscored these peculiarities of professionalism and autonomy in their memoirs, eager to commemorate their profession as steeped in and devoted to the law and as less influenced by the Party and the repressive Soviet machine: autonomy and a professional ethos were supposed to distinguish them from judges or prosecutors. However, this paper, devoted to the professional practices of lawyers after World War Two, especially under Stalin, shows a different picture. After the war, because repression was carried out more and more through courts, and less through extra judiciary instances, lawyers and other judiciary officials were particularly busy. Even if there were few lawyers (10,000 for a population of 165 million), they were influential in cities and knew a lot about the justice system. The lawyers served as intermediaries between individuals and families and the judiciary, the police, prisons and the gulag: this role of intermediaries gave them a special understanding of the complexities of Stalinist society. Their judicial power, however, remained very limited, as procedures narrowed the capacity of lawyers to influence the outcome of a trial, and made the prosecution still more powerful. Lawyers themselves became more and more 'sovietised', with half of them enrolled in the Party, while some of their leaders at regional level built close connections with the security services, the prosecutors and the courts. This paper will show that the important skills that lawyers were able to develop during the last Stalinist decade had less to do with the clever use of law and procedures than with the cultivation of valuable connections with political and social networks, which allowed them to operate in the complex Stalinist society in order to defend their clients.

## **Panel IV: Human Science**

Kenneth M. Pinnow (Allegheny College)

### **From All Sides: Soviet Criminology, Interdisciplinary Knowledge, and the Search for a Unified Understanding of Criminality in the 1920s**

The Bolshevik Revolution ushered in a vigorous period of investigations into the criminal world. Epitomized by the State Institute for the Study of Crime and the Criminal and a series of regional criminological laboratories, these efforts sought to unify the human sciences (medicine, anthropology, psychology, psychiatry, and sociology) in the search for an "all-sided" understanding of crime. This paper treats the criminological institutes as a problem in the history of science and interdisciplinary knowledge. It uses institutional structures and research on the criminal personality to examine the degree to which Soviet criminologists challenged disciplinary and professional boundaries, concluding that their institutes remained multidisciplinary in character. In the process it explores a series of tensions that accompanied the tearing down and redrawing of boundaries and reveals the factors that promoted and inhibited scientific collaboration in the 1920s. The criminological laboratories can in this way provide us with a case study in the modern striving toward the integration of knowledge, disciplines, and professions.

Vera Shibanova (Ruhr-Universität Bochum)

### **Pavel Blonsky's Biogenetic Approach in Paedology: Interdisciplinarity under the Banner of Marxism**

After the October Revolution 1917 one of the biggest concerns of the Soviet government was the care and upbringing of children. Education and training was necessary to compete with the West. Pavel Blonsky, a professor of psychology at Moscow University from 1913 and an outstanding psychologist and educator, was among the founders of a new socialist school and was the first rector of the Academy of Socialist Education. Blonsky was a pioneer in combining psychology with Marxism and developed a biogenetic approach within paedology – an all-round form of 'child studies' that started to evolve in pre-revolutionary Russia. In his theoretical works, Blonsky emphasized a close link between psychology, sociology, and biology and saw in this interdisciplinary approach the possibility for scientific progress. His ultimate goal was to establish paedology as a new, synthetic discipline relating to the growth and development of children in the context of a Marxist theory of human evolution. This paper will focus on the interdisciplinary nature of the approach of Pavel Blonsky and his followers within paedology and the new perspectives and borders of their thinking in the context of Soviet science and the Marxist-Leninist doctrine.

Frances Bernstein (Drew University)

### **Battle Scars: Fighting for the Bodies of Disable Veterans**

The Soviet Union emerged from the Great Patriotic War victorious though battered. As a result of battle wounds, frostbite, gangrene, or improper medical care, millions of Soviet soldiers were disabled as a direct consequence of their wartime service. Once the fighting had ended, emphasis shifted from emergency battlefield measures to the extended process of rehabilitative treatment. It is unsurprising that during the chaos of the war years, there was little coordination and thus some overlap between the efforts of various professionals and organisations charged with caring for this population, including the ministries of social welfare and medicine; the military-medical establishment; the various prosthetics factories; and a number of academic institutes. Once the war had ended, these clashes hardened into entrenched jurisdictional positions. This paper details the intra-institutional fighting over the bodies of disabled veterans. It shows that their actions had a decisive influence on the understanding of disability in the post war period and established the terms by which the state treated all people with physical disabilities for decades to come.

## **Panel V: Geography**

Nick Baron (University of Nottingham)

### **Identities, Interests, Lobbies: Professions and Disciplines in Soviet Cartography, 1918-1953**

Cartography is, by its nature, an interdisciplinary and inter-professional enterprise. It is grounded in research into the shape of the earth undertaken by geophysicists, astronomers, mathematicians and other pure and applied scientists, frequently in the open framework of international collaboration. Until the late twentieth century, larger-scale maps were derived from fieldwork expeditions conducted by topographers, principally under the auspices of secretive state mapping agencies, using high-precision measuring instruments designed and maintained by qualified engineers. Geographers, soil scientists, statisticians, experts in place-names and many others contributed to the creation of specialist maps, which were compiled by skilled technical artists and produced by specialist printers. Smaller-scale maps, devised and published in diverse forms and styles to be used, for example, in economic planning, administration, diplomacy, propaganda or education, required the participation of experts in the relevant fields, to provide data, decide on modes of visual presentation and review the clarity, accuracy and utility of the completed map. Supervising the map-making process were administrators, bureaucrats, accountants and, for the mapping of strategic territories or sensitive data, also military and security officials and censors. Drawing on the author's research into Soviet cartography, 1918-1953, this paper reflects on ways in which Soviet professions and disciplines defined their identities, roles and interests, in relation to their own pre-revolutionary antecedents, to other Soviet professions and disciplines, and to their foreign counterparts, and how they sought to establish mechanisms or institutions to enable inter-professional and inter-disciplinary interaction in the field of cartography, to promote effective collaboration and to preclude or mitigate conflict.

Victoria Donovan (University of St Andrews)

### **Khrushchev's *Kraevedy*: From 'Motley Crew' to Mass Organisation**

In the late-Khrushchev era, *kraevedenie*, a multidisciplinary form of local study that had been repressed in the 1920s for its 'bourgeois passeism' and localist inclinations, was officially restored to the centre of Soviet cultural life. The study of the Soviet *krai* was promoted at this time as a means of fostering patriotic consciousness among the population and encouraging support for the post-Stalinist government's drive to build Communism within twenty years. The regeneration of this defunct discipline nevertheless involved serious institutional challenges, including, not least significantly, the problem of creating a suitably qualified cadre of *kraevedy* to carry out this cultural work in the post-Stalin era. In this paper, I investigate this case of disciplinary reformation in the late-Khrushchev era, paying particular attention to the question of professional and cadre identity within an inherently multidisciplinary field. I argue that *kraevedenie* became a vehicle for Khrushchevian 'participatory politics' in the early 1960s leading to a revision in the understanding of what constituted a *kraeved* and a redefinition of focus of the discipline as a whole.

Jonathan Oldfield (University of Birmingham)

### **Soviet Climate Science: An Interdisciplinary Endeavour**

This paper focuses primarily on the ideas concerning climate change and climate modification that circulated within Soviet geography and cognate sciences post-1945. Understandings of climate and broader work concerning climate modification were relatively advanced in the Soviet Union, founded on a long and celebrated history of conceptual and empirical work in this general area encompassing figures such the 19<sup>th</sup> century geographer and climatologist A. I. Voeikov (1842-1916), who played a key role in advancing understandings of large-scale climatic systems. The first part of the paper pays particular attention to the collaboration between the geographer A. A. Grigor'ev (1883-1968) and the climatologist M. I. Budyko (1920-2001) and their advancement of a periodic law of geographical zonality. Grigor'ev was Director of the Institute of Geography (Soviet Academy of Sciences) for much of the 1930s and 1940s and Budyko was a key figure in the Voeikov Main Geophysical Observatory (GGO), Leningrad, becoming its Director in 1954. Their collaborative work brought together the long-standing interest of geographers in natural zonation and the innovative work of the GGO in the area of the heat and water balance at the earth's surface. The second part of the paper moves on to assess the continued and deepening interaction between physical geographers and climatologists during the 1960s and early 1970s as they began to engage in earnest with issues of anthropogenic climate change and associated environmental concerns. The paper is based on a detailed examination of scientific papers and linked conceptual debates. The author is grateful to the UK's Economic and Social Research Council (ESRC - RES-062-23-1734) for funding the research on which this paper is based.

## **Panel VI: Technology & Education**

Karl Hall (Central European University, Budapest)

**Abstract to come.**

Roman Abramov (Higher School of Economics, Moscow)

### **The Scientific-Technical Revolution (STR) and the Professionalization of Computer Engineers in the USSR**

In the 1960s-80s an important new concept was introduced in the USSR – that of the scientific-technical revolution (STR), designed to articulate qualitative changes in the production and social structure of the country in view of accelerating the transition to a Communist society. The socio-occupational structure of the USSR, as that of other developed countries, had undergone profound changes in the post-war period: new occupations and professions, which did not exist before or belonged only to the intellectual elite, started to emerge and become popular. In the USSR this process was even more striking, since before the Second World War, in spite of the rapid industrialization and the expansion of the education system, the majority of the population remained rural residents and workers. However, the modernization of the system of basic and applied research was carried out in the period of 1945-55, with hundreds of new research institutes (SRI) and laboratories being established. From 1955 the State Committee started work devoted to the introduction of new technology (since 1965 this was the

National Committee on Science and Technology, affiliated to the USSR Council of Ministers). For many years this body was involved in 'introducing the application of advanced science and technology into the national economy, as well as strengthening scientific and technical promotion'. STR became an important symbolic form through which to legitimise the rise of new engineering and technical professionalized occupations: especially in computer and microelectronic industries. The 'cybernetisation' of the Soviet economy was also an important part utopian ideas to bring about the 'scientification' of the administration and management of life in the USSR. Ideological statements about STR were also used by the 'new soviet professionals' (or the 'soviet intelligentsia') as a resource of professionalization and a way of creating autonomy from the ideological pressure of Communist Party units. The mid-1960s brought about a conflict between 'young progressive' cybernetics engineers and orthodox economists about the future of the Soviet economy and ways of managing Soviet industry: the cyberneticists proposed to build large-scale computer networks for the 'rational management' of the economy, while the economists were afraid that the new system would reveal problematic disproportions in the organisation of the Soviet economy. This was the conflict two different expert visions and a struggle to influence government decisions. STR was also an important concept for understanding the process of the 'massification' of technical education because it was used as a tool of the professionalization of several technical and engineering professions in the USSR. Since the end of the 1960s and during the 1970s, Soviet computer engineers and cyberneticists faced many challenges as professions. This included credentials-inflation as universities produced ever larger numbers of graduates with restricted career and salary opportunities; the massification of engineering education also contributed to decreasing levels of quality of engineers, as well as of their social status. Furthermore, the bureaucratic system of Soviet scientific institutions and R&D laboratories made barriers for innovative thinking and inventions initiatives. This became a problem for the self-consciousness and the identity Soviet engineers as a lot of them became disappointed in their professional choice.

Mikhail Sokolov (European University at St Petersburg)

### **Governing the Status Commons: The Strain between Professional/Disciplinary and Higher Education Ecologies in Russia**

An influential line of theorizing about professions regards them as Weberian status groups appropriating access to certain markets and extracting monopolistic rents (Parkin, Sorensen). Allegedly, they do that through monopolizing expertise and establishing their cultural authority (Starr) over certain spheres. For that aim they need academic 'avatars' (Abbott) or disciplines, representing them in the university ecology. Disciplines limit the numbers of certified specialists via control over higher education institutions. While the existence of this control is a workable assumption in many settings, arguably in Russia since perestroika academic organizations largely gained independence vis-à-vis at least some disciplines/professions. The reasons for that have been organizational constitutions inherited from Soviet times, and the universities' ability to distribute profits between internal stakeholders (Winston). Universities thus increased output beyond what was desirable from the professions/disciplines' perspective, and, what was even more harmful, provided no quality control, thus jeopardizing the professions' standing. More generally, the privileged position of a status group is a common good which is obviously extractable, but which in this situation turned out to be only partially excludable (Ostrom). I will discuss diverse outcomes that result from this strain between universities and professions for particular specialties. I will analyse them as the interplay of (a) a demand for respective specializations by students; (b) a degree of support for these specializations by the federal ministry; (c) the strength of professional communities, resulting in their ability to restrict the number of programmes in a given field via licensing procedures. Professions/disciplines have varying success in exerting this control, which is arguably being reflected in far-reaching changes in the system of professions as such. The empirical data on which the paper is based are, first, statistics on approx. 12,500 undergraduate programmes in 60 fields in 600+ Russian higher education institutions, characterizing market niches of these fields, and, second, 30+ interviews with senior university administrators, as well as other qualitative data.