THE BIRTH OF THE ACADEMY OF SCIENCES IN RUSSIA: An Overview on the Cultural Context

O NASCIMENTO DA ACADEMIA DE CIÊNCIAS NA RÚSSIA: Uma Visão Geral do Contexto Cultural

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Abstract: This paper analyzes the historical factors behind the emergence of modern science in the Russian Empire, focusing on the Academy of Sciences during the 18th and 19th centuries. By adopting an externalist approach, it explores the interplay of religious, political, social, and intellectual elements on the evolution of science and the establishment of the Academy. The study emphasizes the relationship between the State and scientific progress, highlighting Peter the Great's modernization efforts. It also discusses cultural exchanges with the West and the role of foreign scientists. This paper provides an overview of the cultural context influencing scientific institutionalization in Russia, offering guidance for future research on its development.
Keywords: Academy of Sciences, Russia, Peter the Great, History of Science.

Resumo: Este artigo realiza uma análise abrangente dos fatores históricos que propiciaram o surgimento da ciência moderna no Império Russo, com ênfase na criação e desenvolvimento da Academia de Ciências nos séculos XVIII e XIX. Adotando uma abordagem externalista para a História da Ciência, investigamos as interações entre aspectos religiosos, políticos, sociais e intelectuais, e seu impacto na evolução da ciência como instituição social. Este estudo visa proporcionar uma visão abrangente da institucionalização do trabalho científico na Rússia, servindo como guia para pesquisas especializadas futuras e oferecendo perspectivas sobre as influências multifacetadas que moldaram a ciência moderna no Império Russo.
Palavras-chave: Academia de Ciências, Rússia, Pedro, o Grande, História da Ciência.

Introduction

The present paper undertakes an exploration of the cultural and historical backdrop that led to the emergence of modern science and its institutionalization in the Russian Empire. The distinct characteristics of Russia within the broader scope of world history have captured the attention of scholars from diverse disciplines. In order to properly expose the historical trajectory of the Academy of Sciences in Russia, a comprehensive approach is required, one that acknowledges its unique attributes. Although not aiming to provide an exhaustive account, this study seeks to offer a general overview of the cultural context surrounding the establishment and development of the Academy of Sciences in Imperial Russia. This analysis encompasses cultural elements

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such as religion, intellectuality, as well as historical, political, and economic factors. By presenting a broad cluster of information, this paper aims to pave the way for further investigations that can delve into specific topics discussed subsequently.

In order to facilitate readability, it is necessary to clarify our choice of terminology. Throughout the following pages, we will refer to our subject of study as the "Academy of Sciences", which work as an alias, since its official name underwent several changes over time. Initially known as the Saint Petersburg Academy of Sciences (1725-1747), it was later renamed the Imperial Academy of Sciences and Arts (1747-1803), followed by the Imperial Academy of Sciences (1803-1836), and finally, the Imperial Academy of Sciences of St. Petersburg (1836-1917). Despite our aforementioned choice, it does not dismiss the importance of considering the historical period to ascertain under which specific name the institution operated.

Historical Background of the Birth of Modern Science in the Russian Empire

The study of Russian history stands as a focal point of interest for numerous scholars across various research disciplines. What makes Russia intriguing is the combination of its geographical location and limited cultural exchange, which have profoundly influenced its distinct sociocultural identity. This identity was shaped by the selective interactions and assimilation of diverse traditions from both Eastern and Western influences. As a result, Russia becomes a compelling focal point for scholars seeking to unravel its rich past and understand its current complexities.

The factors that influenced the development of science in the Russian Empire are numerous and distinct from those observed in the West. Scholars like Graham (1993, p. 6), Buss (2003, p. 4-6), and Coleman (2014, p. 6) highlight the role of Orthodox Christianity in shaping the cultural and intellectual sphere of Eastern Europe, and its implications on the development of a local scientific tradition to varying degrees. Within scholarly discussions on this subject, a prevailing assertion suggests that the religious domain of the Slavic peoples, due to its fundamental doctrines, may have had a retarding influence on Russia's scientific development during its Middle Ages and early Modern Age. A significant piece of evidence supporting this proposition is the ascetic inclination observed in the monastic traditions of Orthodox Christianity. Nevertheless, it is important to note that the mentioned authors view this correlation as a hypothesis requiring further investigation and do not establish a definitive and direct causal relationship between the two historical phenomena.

Additionally, scholars commonly point to other aspects of Orthodoxy that might have influenced to some degree the delay in Russia's scientific development. One of these is the fact that the Russian intellectual context before the 18th century relies on the extensive translation of philosophical and scientific texts into the Church Slavonic language, promoted by dominant religious institutions. Consequently, this emphasis on translation at times led to a detachment from the classical Greek tradition to a greater extent, potentially hindering a comprehensive engagement with the original theoretical framework of thinkers such as Plato, Aristotle, and the Neoplatonists. Graham (1993, p. 14) elucidates this phenomenon in his work, pointing to the possibility of a syncretic appropriation of ideas from these classical sources regardless of the commitment to their original intellectual context.

The intellectual development fostered by the Orthodox Church yielded notable advancements in the fields of arts and humanities, primarily manifesting through its liturgical expressions. However, substantial developments in natural sciences and mathematics were relatively constrained, with only a few prominent individuals making noteworthy contributions (Vernadsky, 1969a, p. 781). As noted by Hughes (1998, p. 310), scientific endeavors can be identified within ecclesiastical circles, yet their distinctive feature lies not on direct knowledge production but rather in their pursuit of comprehending the internal order of Creation, being the knowledge of physical realm some sort of tool to achieve this goal.

In the existing literature, scholars have put forth arguments suggesting that the influence of Orthodox Christianity in Russia shares some similarities with the relationship between Protestantism, modern science, and Western capitalism. Makrides (2019, p. 30), Hall and Bayuk (2016, p. 576) demonstrate that dedicating oneself to work, both practically and theoretically, engaging in empirical action in the physical world, and accumulating wealth were not stigmatized or guilt-inducing within the context of Orthodox Christianity. On the other hand, Tarasov (2011, pp. 130, 140) points out that despite the absence of restrictions on work dedication, as supported by the monastic principle of *ora et labora*, the actual impact of Orthodox labor ethics on the establishment of capitalism in Russia was limited. This limitation was due to the modest surplus of production and the primary focus that the monastic work had on its educational and social aspects. Interestingly, the religious dedication to work did not provide the material conditions for capitalism to emerge, as proposed by the well-known Weberian thesis, nor did it offer the intellectual structures for the Scientific Revolutions that would foster the flourishing of modern science in the Russian Empire[1].

Based on these considerations, the existing literature exploring the connection between religious traditions in Medieval Russia and the Russian Empire with the development of a scientific tradition reveals limited overlapping relationships between these phenomena. These intersections alone are inadequate to conclusively assert that the historical development of science in the Russian Empire can be solely explained by the influence of the religious sphere. While it may have been a significant factor in the process, it lacked sufficient impact to initiate a profound revolution in the cultural and spiritual domains that would drive the essential transformations for establishing a scientific tradition and its subsequent institutionalization within an Academy of Sciences. Nonetheless, considering the available bibliography, it would be unscientific and contrary to the evidences to claim that the Orthodox Church, due to its doctrinal particularities, represented an absolute hindrance to Russian intellectual development, not only for the reasons mentioned above, but also for its role in facilitating to some extent the contact between the Slavic peoples and Western culture (Vernadsky, 1969a, pp. 743-745, 776).

In the context of political and diplomatic relations before the 18th century, specialized bibliography highlights the significant impacts of the Mongol and Tatar occupation on the territory of Kievan Rus — a tribal federation existing at the time. Beginning in the 13th century, the subjugation of the Russian principalities to the Khan's rule endured for approximately two hundred and fifty years. Throughout this period, the presence of Mongols and Tatars — sometimes indistinguishable in historical sources — contributed to the formation of the Kievan Rus state, especially regarding the administrative and bureaucratic spheres.

In terms of scientific development, the Mongol occupation in Russian territory had no substantial impact on the emergence of an autochthonous scientific tradition that would later play a key role in the scientific revolutions of the Modern age. Despite the remarkable development in many scientific fields in Mongolia, such as medicine (Safavi-Abassi et al., 2007), and the cultural exchanges among the nationalities under Mongolian sovereignty being a common practice, Russian citizens, however, remained largely unaffected by these profound cultural exchanges (Vernadsky, 1946, pp. 56-58). The general outline of this period of occupation is usually described as:

> For two and a half centuries, while Western Europe grew in political strength and cultural achievement, the Russian principalities were under foreign rule. The Mongols were interested primarily in political submission and taxation; after submission was established, they allowed the Russians to maintain the Orthodox church and their princely order because this system facilitated administration and payment of taxes. A side effect of the system, however, was to increase

> political and intellectual authoritarianism (already strong even before the arrival of the Mongols) throughout Russia, and to reduce its contacts with Western Europe (Graham, 1993, p. 15).

Additionally, the Mongol Empire's political stance of permitting subjugated nations to uphold their local faiths, though commendable for its time, proved insufficient in cultivating the scientific aspirations essential for the forthcoming scientific revolutions in Russia. This limitation stemmed from the Orthodox Church's incapacity, as previously underscored, to propel such ambitions on its own.

A comparable impact can be observed in the realm of local economic development. Prior to the invasion led by Genghis Khan, the principalities of Kievan Rus boasted a vibrant artisan culture and a flourishing manufacturing system, both of which were completely devastated by the time of the Mongol invasion (Vernadsky, 1953, p. 338; Furhmann, 1972, p. 14). As a result, the economic conditions in Russia post-liberation in the 15th century were ill-prepared for a gradual escalation in its production rate, whose surplus would have played a crucial role in composing the material basis to foster the development of modern science, distinguished by its experimental practices. Vernadsky (1969a, pp. 747-750) further describes the period of Mongol occupation in Russia, from the 13th to 15th centuries, as characterized by a significant initial economic depression and a series of subsequent economic fluctuations until Moscow's liberation in 1480. The impacts of these foreign invasions on Russian territory generated instabilities that deeply influenced the development of Russian science.

Therefore, the Mongolian occupation had two significant effects on Russia during the period of subjugation. Firstly, it failed to introduce the necessary foreign influences essential for the emergence of modern science, a deficiency that would only be rectified centuries later. Secondly, the distinct characteristics of Mongol rule in Russian lands hindered the substantial development of its material infrastructure, thereby resulting in a considerable economic setback. The correlation between this economic stagnation and the delayed scientific development has been increasingly studied in recent decades within the field of history of science.

Russia on the Doorstep of Modernity

The tumultuous trajectory of Russian history offers valuable insights into comprehending, among various phenomena, its distinct delay in scientific development. Geopolitically, its strategic location between the East and West emerges as a crucial factor for a comprehensive understanding of its historical evolution. The cultural and political

interactions that Russia experienced — as Kievan Rus (882-1240), under the Tatar and Mongol yoke, and its influence in the Principality of Moscow (1283-1547), or as the Muscovite Tsardom (1547-1721) — with neighboring entities such as Lithuania, Poland, Germany, Mongolia, and others were formative in shaping its identity as a people, culture, territory, and, from 1721 onwards, an empire.

Moreover, the cultural composition of the Russian people exhibited resistance to assimilating foreign intellectual influences, and concurrently, no indigenous intellectual movement emerged to drive the essential advancements required for the establishment of extensive industry and technological progress. Conversely, despite the existence of contacts with Western culture before the 18th century, there is no compelling evidence to support the notion of sufficient cultural assimilation akin to what transpired in the West to facilitate the development of modern science. Similarly, throughout its history, Russia did not undergo a series of revolutionary processes crucial for the cultural transformations that would create a conducive atmosphere for scientific progress. As aptly put by Marc Raeff:

> The Western Europe of the late seventeenth century, however, was a product not only of the medieval flowering of a Christian civilization and of a social system built around the family (in the broader sense), the corporation, the church, and the common acceptance of norms and symbols that combined the pagan tribal with the Christian imperial legacies. If it were only that, then the world of the West would have been no more strange to the Russians of the late seventeenth century than it had been to their ancestors of Kievan times or to their teachers, the Byzantines of the ninth century. In fact, however, the West implied much more, and in particular those elements that had been developed by the historical events we call—in shorthand fashion—the Renaissance, the Reformation, individualism, and the rise of modern science (Raeff, 1972, p. xv).

The Foundation and Initial Development of the Academy of Sciences in the 18th Century

The immediate antecedents leading to the establishment of the Russian Empire in 1721 significantly influenced the overall trajectory of scientific development in the nation. Peter I, widely regarded as the "modernizer of Russia", perceived his country as falling behind the featured Enlightenment standards prevalent in 18th-century Western Europe, in stark contrast to the knowledge and ideas it was actively assimilating from the West.

The figure of Peter I holds a central position in the study of Russian history. Notably, his role in the formation of the Russian Empire in 1721 remains a subject of scholarly debate among historians. Scholars such as Raeff (1972, pp. ix-xiii) and Cracraft (2004, pp. 1-12) scrutinize the impact of Peter I on Russian history. While some argue that his reforms were revolutionary in nature, others contend that his actions represent the culmination of a transformation with deeper historical roots embedded in the broader context of Russian history.

During the reign of Peter I, a significant process of cultural convergence with Western Europe took place. The impacts of this process extended beyond the realm of governmental and administrative institutions and were evident in various cultural aspects of society from clothing (Raeff, 1972, p. 56) to language (Offord et al., 2018, pp. 94-95). However, it is crucial to acknowledge that this cultural assimilation, spearheaded by Peter I, primarily targeted the Russian nobility.

In this context, the establishment of the Academy of Sciences played a pivotal role in the process of Westernisation, which was widely perceived as synonymous with modernization during that era. The objective extended beyond merely assimilating intellectual products from the West; it also encompassed the education and preparation of Russian intellectuals to operate within the standards of Western research. As Turnaev aptly states:

> In 1724, a new scientific center emerged in Europe – the St. Petersburg Academy of Sciences. Founding the Academy and inviting foreigners to become its first members, Peter I and his associates hoped to address an important state task – to carry out the scientific and technological modernization of the country and prepare domestic scholars for this purpose (Turnaev, 2013, p. 134).[2]

In conclusion, the process of modernization, rooted in the cultural engagement with Western Europe, was set in motion by Emperor Peter I, with its most pronounced developments unfolding in subsequent historical periods. Consequently, a thorough analysis of the available resources becomes imperative to identify references and influences associated with the assimilation of Western scientific knowledge in Russia.

The presence of technicians and scientists from other countries in Russia is a phenomenon that can be traced back centuries before the inception of the Empire. The influx of foreign labor, particularly of a technical nature, was substantial in the initial years following the liberation from Mongol yoke. This fact finds confirmation in research on the genesis of capitalism in the 16th and 17th centuries (Fuhrmann, 1972, p. 23), as well

as in publications detailing the social changes that unfolded during the 18th century (Cracraft, 2004, p. 39).

However, the foreign contact that exerted the most significant impact on the early decades of the Russian Empire's Academy of Sciences was the exchange of letters between Peter I and the German philosopher G. W. Leibniz. This view is widely shared among the consulted sources, including Cracraft (2003, p. 107), Lipski (1953, p. 349), Demidov (2012, p. 670), and Vernadsky (1969b, p. 37). Moreover, Massa-Esteve (2020, p. 4) and Guseinov (2017, p. 511) provide more concrete evidence, demonstrating that many of the measures implemented by Peter I to advance scientific production in the country were directly suggested by Leibniz. Examples of such measures include organising expeditions to explore poorly charted regions of Russian territory and producing subsequent cartographic works, facilitating the travel of students and researchers to other countries, and enacting legislative changes to ease the entry of foreigners into Russia.

Thus, from its inception to its early years of operation, the 18th-century Academy of Sciences in Russia was predominantly influenced by foreign members. Although the adoption of Russian citizenship for migrants had been implemented in the 15th century in the context of economic development, foreigners who went to the Russian Empire for scientific purposes typically returned to their home countries after completing their stay (Graham, 1993, p. 30). Consequently, conducting research on the members of the Academy of Sciences of the Russian Empire becomes pertinent to identify the presence of foreign members within the scientific organization, their hierarchical positions within the Academy, and their influence in the bureaucracy.

The overwhelming presence of foreigners among the membership of the Academy of Sciences is evident from historical documents meticulously recording its composition. A thorough examination of Modzalevskii's (1908) comprehensive list of members reveals a striking pattern during its formative years. The Academy heavily relied on the expertise and contributions of foreign scholars, reflecting an era of robust international collaboration and knowledge exchange.

However, as the Academy matured and evolved over time, a discernible trend towards russification became apparent in its later years. This gradual shift can be observed in the increasing representation of Russian intellectuals and scientists within the institution. The Academy of Sciences, once primarily reliant on foreign knowledge and expertise, began to nurture and cultivate a growing cadre of domestic scholars, as it can be seen in the following table:

Table 1: Percentage of member in the Academy of Sciences that were born and dead in Imperial Russia.

Distinctive period of the Academy of Sciences in Russian Empire	Born in Russia	Dead in Russia
Saint Petersburg Academy of Sciences (1725-1747)	12,2%	65,3%
Imperial Academy of Sciences and Arts (1747-1803)	30,5%	70,6%
Imperial Academy of Sciences (1803-1836)	26,6%	71,1%
Imperial Academy of Sciences of St. Petersburg (1836-1917)	77,3%	80,9%

Source: Prepared based on own database.

The table provided above delineates key characteristics pertaining to the internal membership dynamics within the Academy of Sciences in Imperial Russia. It is essential to underscore that the dataset employed for constructing this table primarily comprises individuals holding the title title of "Ordinary Members" (*Дѣйствительные члены*, as designated in the document). This designation was reserved for individuals actively engaged in scientific endeavors and administrative works within the institution. To include "Honorary Academics" (*Почетные Академики*) and "Correspondent Members" (*Члены-корреспонденты*) and some other titles in our analysis could potentially introduce misrepresentations of the prevailing circumstances. Honorary Academics were granted their title based on meritorious achievements rather than direct affiliation with the Academy, while Correspondent Members were individuals associated with scientific institutions abroad, who used to have connections to the Academy of Sciences to some extent. Though all these categories of members constituted the Academy of Sciences as a whole, their inclusion might attenuate the precision of our conclusions concerning the dimensions of foreign engagement and the emergence of an indigenous scientific community.

Throughout the period indicated in the table (1725-1917), a conspicuous disparity between the proportion of native Russian academics and those who passed away within Russian territory becomes evident upon initial examination. This phenomenon can be attributed to the fact that Imperial Russia could not draw upon a pool of scholars educated within its own institutions, as Russian universities did not exist until the latter half of the 18th century. As Guseinov (2017, p. 512) remarks “All 17 of the first members of the Academy were foreigners, primarily from German principalities. They did not know either the language or the morals of the country where they were going to work. For

almost ten years, no Russian was in the Academy." Consequently, a substantial portion of early members were foreign, including notable figures such as Leonhard Euler and Daniel Bernoulli. Simultaneously, a noteworthy portion of these foreign scholars chose to remain in Russia until their demise, while others, primarily those in opposition to the tsarist government, departed the country shortly after the expiration of their contracts.

Moreover, there is an observable gradual escalation and slight variability in the proportion of natively Russian academics during the initial stages of the Academy of Sciences, with a notable exponential increase occurring during the latter half of the 19th century. This surge can be attributed to several contributing factors, including the advancement of scientific research within universities, the proliferation of nationalist sentiments leading to a growing divergence from Western influences, and the emergence of intellectual movements such as Orientalism and Slavophilism. Notably, this temporal pattern coincides with the presidency of the Academy of Sciences by scholars who supported these ideas, including Sergey Uvarov (1818-1855) and Dimitri Tolstoy (1882-1889), whose profound influence significantly shaped the activities within the institution. The rise in the representation of Russian scientists within the ranks of the Academy of Sciences reflects a component of what Schulze (1985, p. 317-319) characterizes as the process of Russification within this scientific institution.

This transformation in the Academy's membership composition reflects the dynamic nature of scientific and academic exchange during that period. It illustrates the institution's progressive integration of native talent and expertise, contributing to the eventual development of a uniquely Russian scientific community. As a result, the Academy of Sciences played a pivotal role in fostering indigenous scientific advancements and promoting national scientific identity.

The Consolidation and Development of Intellectual Production in the Academy of Sciences

Throughout the 18th century, the scientific production of the Academy was primarily focused on the fields of mathematics and natural sciences (Graham, 1993, p. 31), with a distinct emphasis on their utilitarian applications in military and maritime development (Graham, 1993, p. 17). This pragmatic orientation in scientific research aligns with Peter's explicit agenda to modernize the cultural sphere and foster the material advancement of the Russian state.

Moreover, the endeavor to import scientific knowledge, as highlighted by Ratto (2021, p. 333), did not yield the desired success in its first decades. Even Voltaire had previously remarked on the challenges Russia encountered in assimilating the scientific ideas of the West, attributing the absence of conducive intellectual conditions for the flourishing of a local scientific culture in the country. In this context, Graham reiterates the ongoing debate on this matter, shedding further light on the complexities surrounding Russia's engagement with Western scientific thought.

> Peter the Great at the beginning of the eighteenth century was impatient to bring science and technology from Western Europe to Russia, and he attempted to do it by starting from the top, with an academy of sciences. His critics doubted the wisdom of this method, maintaining, "There is no one to learn, for without secondary schools this academy will merely cost a great deal of money and yet be useless." Peter replied characteristically, "I have to harvest large shocks of grain, but I have no mill; and there is not enough water close by to build a water mill; but there is water enough at a distance; only I shall have no time to make a canal, for the length of my life is uncertain, and therefore I am building the mill first and have only given orders for the canal to be begun, which will force my successors to bring water to the completed mill" (Graham, 1993, p. 17).

In this historical context, the 18th century culminates with a noteworthy intellectual contrast that would pose a significant challenge for the Russian Empire in the 19th century: the establishment of a national and enduring Academy of Sciences, harmonized with the interests of the Russian state. This would entail the creation of an Academy that could operate independently of foreign intellectual influence. However, this endeavor encountered initial volatility, as many foreign scientists returned to their homelands after completing their contracts in Russia and largely expressed disagreements with the policies of the tsars (Turnaev, 2013, p. 135). These circumstances added complexity to the task of shaping a robust and self-sustaining scientific institution and a coherent scientific community in the country.

In contrast, the 19th century was marked by prominent national figures who had international impact, such as the mathematician Nikolay Lobachevsky and the chemist Dmitri Mendeleev. However, scientific development faced an unfavorable political and social environment, primarily due to the influence of nationalism and conservatism, which extended cultural barriers with the West and affected scientific production in the Academy. In this regard, Graham asserts that,

> The evolution of education and science in nineteenth-century Russia was a dramatic and painful story that combined, at different moments, grand ideals and great achievements with political repression and

> obscurantism. Despite the setbacks and continuing difficulties, the record in science was impressive. By 1900 Russia had produced a number of scientists known throughout the international science community. Science had at last won a place in Russia's rich cultural tradition, alongside religious art, architecture, literature, music, and poetry (Graham, 1993, p. 53).

Accordingly, the apparent paradox of notable scientific achievements amid a backdrop of political tension and complex interactions among foreign and Russian scientists and the State underscores the necessity for our analysis to delve into these dynamics to substantiate our conclusions effectively. Thus, in addition to examining the historical trajectory of the Academy as an institution, it becomes imperative to consider the intertwined political, social, and economic factors that surround it. Ignoring these essential aspects would render our work detached from its material and scientific analytical foundations, hindering a comprehensive understanding of the subject matter.

The State and its Relations with the Academy of Sciences in the Russian Empire

Conducting a comprehensive examination of the Academy of Sciences in Russia requires moving beyond a sole focus on the intellectual aspect by itself. Instead, it becomes indispensable to explore the institution's internal dynamics while simultaneously considering its intricate connections with the state power of the Russian Empire and its position within Russian society. By encompassing these interrelated facets, a more nuanced and complete understanding of the Academy's role and impact in shaping Russian scientific development can be achieved.

Since its genesis, the Academy of Sciences in Russia shared a deep connection with the Russian government, even if the Empire's nominal mark was not explicitly evident. Functioning as a governmental body, the institution's ties with the Empire can be traced back to its earliest days. Accordingly, the relation between Leibniz and Peter the Great was crucial to the development of science in Russia, and it spreads light into the question of scientific institutions as well. As Guseinov states,

> Leibniz was obsessed with the ideas of the integrity of science and its decisive role for the growth of the welfare of society and the might of the state and the necessity to unite the possibilities of science with the strength of supreme power. According to him, the corresponding form of organizing science was academies as communities of scientists under the direct protection of a sovereign (Guseinov, 2017, p. 511).

Therefore, the Russian Empire exerted direct influence on the organisation of the Academy, particularly in its highest hierarchical positions. This interplay between the

Academy and the Russian Empire highlights the significance of considering the institutional and political context in our analysis. As Graham points out,

> The Academy was from the beginning treated as a branch of the government and subject to imperial command. The original project drawn up by Blumentrost and approved by Peter granted the Academy the privileges of self-government, including the right to elect its own members and president. However, this provision was violated from the start. The entire 1725 project, carrying Peter's signature, was hidden from the academicians by the court librarian, J. D. Schumacher, who acquired personal control of the Academy, establishing the precedent of rule by court favorites, which became a feature of the Academy's history. The promised right of electing their own presidents was withheld from the academicians until the advent of the provisional government in 1917 (Graham, 1993, p. 19).

Throughout the studied period, the State consistently influenced the functioning of the Academy, emphasizing the significance of taking these factors into account in our analysis. Moreover, it is essential to recognize that state policies aimed at advancing scientific knowledge had positive implications for the Academy, even if they were not specifically targeted at it. An illustrative example of this is the Russian Empire's promotion of written culture, including the translation and publication of scientific texts and the creation of maps, initiated in the early 18th century to challenge the ecclesiastical monopoly on the press (Hughes, 1998, pp. 298-301). Consequently, shortly after its establishment, the Academy of Sciences began publishing scientific journals. By considering these interconnected aspects, we can obtain a more comprehensive understanding of the Academy's development and its relationship with the Russian Empire.

The influence of State intervention in scientific and intellectual activities could vary, acting as both a catalyst and a repressive force. In the decades from 1720 to 1740, foreign scientists affiliated with the Academy vigorously opposed state control, advocating for principles of independence and autonomy for scientific institutions. Turnaev (2013, p. 135) highlights that these members of the scientific community held an advantage as foreigners, knowing they could return to their homeland after finishing their contracts. However, the State sought to suppress this movement, revealing that the relationship between the State and the Academy of Sciences was evident from its early years, encompassing aspects such as financial and technical support, as well as regulatory and supervisory roles. By recognizing these dynamics, one can better comprehend the intricate interplay between the State and the Academy in shaping the scientific landscape during this period.

The 19th century stands out as a significant period when examining the repressive nature of the State towards the Academy. Marked by the instability caused by the Napoleonic wars, this era witnessed a surge in mysticism, conservatism, and nationalism, prompting the State to implement restrictive measures. Notably, Tsar Nicholas I, in response to the revolutionary incidents of 1830 and 1848, decreed the closure of universities and imposed constraints on the exchange of ideas and scientists between Russia and the Western world. These actions had profound implications for the Academy's scientific pursuits and interactions with the international community, shaping the scientific landscape within the confines of the Russian Empire. Understanding this historical context is crucial to grasp the complexities and challenges faced by the Academy during this period.

Indeed, the 19th century was not characterized solely by absolute repression and terror, but rather by a dynamic interplay between the interests of the Tsarist regime and the autonomous endeavors of the Academy of Sciences. Throughout this period, a constant tension existed between the State's desire to foster national progress and scientific advancement and the Academy's pursuit of autonomy. While the government aimed to align scientific development with the nation's interests, there were instances when the Academy had to comply with direct control from the state bureaucracy.

It is essential to recognize that the 19th century witnessed both State repression and initiatives to promote scientific progress in the Russian Empire. For instance, rulers like Nicholas I implemented highly restrictive measures, such as the closure of universities and restrictions on the free exchange of ideas and scientists. Conversely, other rulers like Alexander II initiated reforms that encouraged greater openness to foreign influences and increased autonomy for Russian scientists, although the tangible outcomes of these policies were often more limited than their formal representation. Nonetheless, during the second half of 19th century, as much as the restriction over scientific work were loosen, the prestige it faced in the civil society has increased and began influencing and shaping Russian worldview in a large scale (Hachten, 2002, p. 181).

The tension between the Tsarist regime's interest in advancing science aligned with national goals and the Academy's aspirations to maintain its independence and research freedom remained an ever-present aspect of this historical era. Understanding this complex relationship between the State and the Academy is vital for comprehending the challenges and developments that shaped the scientific landscape within the Russian Empire during the 19th century.

Hence, a broad approach of these dynamics is crucial, as they play a vital role in the present research. Graham aptly summarizes this process, stating that.

> Nonetheless, significant advances in education for science and technology occurred even during the conservative eras. Indeed, the rulers of nineteenth-century Russia favored the development of science and technology if given the assurance that it would not undermine the existing political and social order (Graham, 1993, p. 32).

Nobility as the Thinking Class

Even prior to the establishment of the Academy, the Russian nobility emerged as the class entrusted with the production and dissemination of technical and scientific knowledge to serve the Russian Empire, owing to their close ties with the Tsar's power. This is evident in Peter I's direct control over various aspects of noble families' lives, starting from the late 17th century, particularly concerning education and State service. As highlighted by Hughes (1998, p. 174), the formal education of noble children was typically overseen by their parents, but their studies was often limited to basic literacy, which did not align with Peter I's modernization plans. In this context, state intervention played a pivotal role as the State was responsible for determining the level and duration of studies for young members of noble families, under direct orders from the Tsar and faced with the risk of severe penalties whether studies were conducted otherwise.

The concept of “service” plays a crucial role in understanding the role of the nobility in scientific development within the Russian Empire. Extended study stays in Western countries not only marked the initial phase of a noble's education but also served as preparation for their future responsibilities: serving the State. Regarding this aspect, it is important to consider two distinct dimensions. On one hand, as noted by Hughes (1998, pp. 173-174), the nobles had a fundamental obligation to fulfill certain tasks, such as joining the military body of the Russian Empire. However, on the other hand, it was not merely a matter of pure obligatoriness. Works by Besançon (1967, p. 448) and Confino (1993, p. 48) confirm that during Tsar Peter I's rule, the nobility's status underwent changes, with lineage losing its significance in maintaining noble status. Therefore, for the nobles, their identity and sense of purpose were intricately linked to serving the Russian Empire. However, it was not a direct submission to the Tsar but rather to a third entity: the State.

Following the promulgation of the Table of Ranks in 1722, the rationalized system of promotion and social advancement for the nobility increasingly emphasized the aspect

of public service. Consequently, from its establishment until the Regulations of the Imperial Academy of Sciences in 1863, the scientific body of the Academy was predominantly composed of members of the nobility, with only a few exceptions like Mikhail Lomonosov.

Therefore, for a significant part of its history, the Academy was primarily led by scientists from the nobility, and this phenomenon becomes essential to analyze the development of this institution, once this material condition might have essentially influenced the history and functioning of the Academy of Sciences in Imperial Russia.

Conclusion

In conclusion, the inception and evolution of the Academy of Sciences in Russia is the outcome of a confluence of diverse factors, intricately intertwined with both internal dynamics and external influences. The historical narrative underscores the institution's adaptive nature in navigating the complexities of Western scientific influences while simultaneously aligning with the imperatives of the Russian State. This relationship between the Academy and broader social forces underlies its pivotal role in shaping the scientific landscape of Imperial Russia.

By delving into the nuanced interplay of foreign intellectual currents, state interventions, and indigenous scientific endeavors, this study sheds light on the multifaceted nature of the Academy's development. The institution's engagement with Western ideas, coupled with its integration into the Russian society, highlights the dynamic of transformation of scientific institutions within a complex cultural milieu.

Moreover, further research endeavors should aim to delve deeper into the institutionalization process of the Academy of Sciences in Russia, examining particular mechanisms through which it interfaced with state power and external intellectual currents. This study serves as a stepping stone for future investigations into the mosaic of influences that shaped the Academy on each stage of its development.

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[1] We are aware of Robert K. Merton's thesis in *Science, Technology, and Society in Seventeenth-Century England* and its contribution in relating the core values of experimental science to the Protestant ethic. However, in this article, we cannot dedicate too much space to this cultural aspect, although the value of conducting research on Merton's thesis in the specific case of the religious landscape of the Russian Empire is undeniable. We leave this approach for potential future occasions.

[2] Free translation of: В 1724 г. в Европе появился новый научный центр –Петербургская Академия наук. Основывая Академию и приглашая иностранцев, ставших её первыми членами, Пётр I и его сподвижники надеялись решить важную государственную задачу – произвести научно-техническую модернизацию страны и подготовить для этой цели отечественных учёных. Последствия, однако, превзошли ожидания. Иностранные учёные, прибывавшие с Запада, везли с собой не только знания, но и западные образцы организации общественной жизни. Включение России в общеевропейский научный процесс (хронологически совпавшее со второй четвертью XVIII в.) не было простым. Страна находилась на периферии европейской цивилизации. Европейские фасады зданий, покрои платья, манеры общения, появившиеся в годы петровских реформ, не могли скрыть общей отсталости России, обнаруживавшейся во всех областях. Главным препятствием были общественные отношения, покоившиеся на несвободном труде.

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