

An Unexpected Source of Russian Neo-Kantianism: Alexander Vvedensky and Lobachevsky's Geometry

Author(s): Catherine Evtuhov

Source: *Studies in East European Thought*, Dec., 1995, Vol. 47, No. 3/4, Neo-Kantianism in Russian Thought (Dec., 1995), pp. 245-258

Published by: Springer

Stable URL: <https://www.jstor.org/stable/20099585>

---

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



Springer is collaborating with JSTOR to digitize, preserve and extend access to *Studies in East European Thought*

JSTOR

CATHERINE EVTUHOV

AN UNEXPECTED SOURCE OF RUSSIAN  
NEO-KANTIANISM: ALEXANDER VVEDENSKY AND  
LOBACHEVSKY'S GEOMETRY

KEY WORDS: Euclidean geometry, Kazan, Lobachevsky, space, Vvedensky

It has long been a commonplace that Kant's philosophy was relatively unimportant in Russia, the land of Schelling and Hegel par excellence. Kant's ideas, it seems, did not keep the youth of Moscow and St. Petersburg in the 1840s up until all hours, delaying dinner for the sake of discussing the possibility of synthetic *a priori* judgments. The importance of Kant for Russian thought at the close of the nineteenth century, in contrast, is both undeniable and the object of increasing scholarly attention. Kant's influence, it turns out, can be felt not only among those who explicitly identified themselves as Kantians or Neo-Kantians, but among writers, poets, social thinkers, and religious philosophers. All the same, it seems peculiar that the reception of Kant, whose ideas Vladimir Solov'ev considered "the single main turning point in the history of human thought,"<sup>1</sup> should occur so late in Russia – almost a century after the philosopher's death. In the present essay, I would like to look at the ideas of the leading exponent of Neo-Kantianism at St. Petersburg University, Alexander Vvedensky, in the larger context of Russian Kantianism. Vvedensky (1856–1925) is practically identified with Russian academic Neo-Kantianism at the turn of the century; his interpretation of Kant was immensely influential for an entire generation of students. I would like to suggest that, indeed, the story of Kant in Russia is less simple, and rather more engaging, than the above sketch indicates; Vvedensky's philosophy points to a more complicated, "homegrown" context of the renewed interest in Kant in the 1890s.

*Studies in East European Thought* 47: 245–258, 1995.

© 1995 Kluwer Academic Publishers. Printed in the Netherlands.

## IDEAS: VVEDENSKY'S KANT

The “discovery” of Kant in the 1890s coincided with another, seemingly unrelated, and certainly less well-known, event in Russian cultural life. The European bourgeoisie, at the turn of the twentieth century, had a mania for jubilees and celebrations; Russians were no exception, as the most famous of these – the Romanov tercentenary in 1913, the Pushkin jubilee in 1899, the All-Russian Fair at Nizhnii Novgorod in 1896 – remind us. 1893 was the jubilee year of Nikolai Ivanovich Lobachevsky (1793–1856) – renowned mathematician, and rector of Kazan University. The occasion – the hundred-year anniversary of his birth – was celebrated with due pomp and ceremony in the city where he had lived and taught for many years. Addresses were delivered by the prominent scientists and mathematicians of the day and, three years later, a monument was unveiled and planted in the square across from Kazan University. The festivities were accompanied by a surge of interest in the thinker himself. Young ladies as far away as Kiev were initiated into the mysteries of the pseudosphere and non-Euclidean space by inspired instructors,<sup>2</sup> while scientists (most vocal among them A. Vasil’ev) quoted their illustrious European colleagues to the effect that Lobachevsky’s achievements had been of Copernican magnitude.<sup>3</sup>

Most interesting, for present purposes, is that Lobachevsky began to be seen not just as a mathematician and scientist, but as a philosopher. This was, perhaps, a part of the process of his popularization, and, perhaps, partly the result of his new admirers’ own philosophical interests. In any case, A. Vasil’ev, in his address at the commemorative meeting of the Imperial University of Kazan on 22 October 1893, argued that Lobachevsky’s non-Euclidean geometry functioned, among other things, as a response to Kant’s theory of space in the *Critique of Pure Reason*.<sup>4</sup> Though the quite dry and strictly mathematical writings of Lobachevsky himself never mention the name of Kant, or discuss his ideas directly, Vasil’ev’s sense that Lobachevsky’s geometry had philosophical significance was echoed by others as well. Not least among these voices was that of Alexander Vvedensky, professor at St. Petersburg University. Vvedensky opened the initial session of the Philosophical Society at the University on 31 January 1989 (an event quite unrelated to Lobachevsky) with a speech that singled out, as the main pillars of

the Russian philosophical tradition, the Slavophiles and Westernizers on one hand; and, more unexpectedly, Nikolai Lobachevsky on the other. If the Slavophile-Westernizer debate had been of immense importance for the life of Russia, Vvedensky proposed, Lobachevsky's geometry had been equally important for the philosophy of the whole world.<sup>5</sup> As a result of the jubilee, "now all Russians, too, have found out what has long been known in the West, namely that Lobachevsky's works are significant not for mathematics alone, but even more for the primary branch of philosophy – for the theory of knowledge,"<sup>6</sup> and, as such, they had stimulated the work of Riemann, Helmholtz and others.

The philosophical implications of Lobachevsky's geometry had, of course, to do with the notion of space. Clearly, Lobachevsky's proof that parallel lines might, in fact, eventually intersect (with its corollary that the sum of the angles of a triangle might equal less than  $180^\circ$ ) raised questions about the shape of space itself. Was empirical space curved or flat? If we knew already that there were two kinds of space, Euclidean and Lobachevskian, might there be other, indeed an infinite number of types of space? Did empirical space exist at all, or was "space" merely an organizing concept of our imagination, with no necessary correlation to "external reality"?

These "Neo-Lobachevskian" concerns were expressed, for example, in an 1896 paper by Professor N. Vladimirskii, "O znachenii slova 'prostranstvo.'" Vladimirskii's paper exemplifies a quite popular, hyper-materialist reading of Lobachevsky: far from establishing the existence of different kinds of space (at the time, three were known – Euclid's, Lobachevsky's, and Riemann's), non-Euclidean geometry, he argued, merely presented us with the empirical problem of determining *which one* was the representation of the single, true space. All geometry was ultimately grounded in empirical observation; and if abstract thought was capable of imagining a different kind of extension and thus creating a new geometrical system (as Lobachevsky had done), it still was not capable of determining which of the different possible extensions existed in reality.

One question, among others, that concerned Vladimirskii and his colleagues was whether, and how, Lobachevsky's geometry might be reconciled with Kant's notion of space. Vladimirskii and Vasil'ev even entered into a polemic in which the former claimed compati-

bility of the two “philosophies,” while the latter denied it.<sup>7</sup> The specifics of their argument are too dusty to merit particular attention; what is interesting is that they seem to have shared an interpretation of Kant that, to our sensibility, looks at least peculiar. “Their” Kant – who, apparently, was a vulgar positivist – seems to have claimed, first and foremost, that “our knowledge of space is an absolute knowledge, not needing to be verified by experience.”<sup>8</sup> There was, in other words, an *absolute space* which we could know *a priori*. Our task, then, was to bring empirical space and our conception of it in line with each other. So, if one were to remain true to this Kant, it would be inconvenient, or even impossible, for several different kinds of space (Euclid’s, Lobachevsky’s, Riemann’s) to exist at once. And here the controversy between the two professors arose: Vasil’ev said that Lobachevsky had irreparably damaged this (positivist) Kant; while Vladimirskii saved him by making a distinction between “pure” (or “absolute”) space and a mere geometrical system like Lobachevsky’s or Euclid’s, of which there could be several, but *we did not yet know* which one was correct (i.e. matched empirical reality).

I adduce these obscure discussions exclusively because I think they can help explain some of the emphases of Vvedensky’s Neo-Kantianism. Vvedensky was preoccupied by the same questions that animated his scientist contemporaries, and that were raised as they tried to reconstruct the philosophical implications of Lobachevsky’s geometry: did space and time exist? and, what was the relation of our *a priori* conceptualization of space to experience? These were the essential questions to which Vvedensky sought an answer in Kant’s philosophy.

In addressing the first question, Vvedensky argued emphatically against his positivist colleagues. He expressed his position quite succinctly and clearly in an 1895 essay, a polemical exchange with a colleague, entitled, “On the real and the imagined Kant.” The “real” Kant, argued Vvedensky, had maintained, quite simply, that space was a subjective phenomenon. In other words, space was something we could represent to ourselves in our consciousness; but nowhere, either inside ourselves or in the external world, did space as a real “extension” exist. “When [Kant] says that space is subjective and that it exists exclusively *within us*, this statement must be understood

*only thus*: inside us exists *a mere representation* of space (and not space itself, not a real extension); and for this reason space inevitably *seems* to us to exist in everything that we are conscious of through the very application of this representation; in fact, though, there is no space anywhere – neither within us, nor outside us.”<sup>9</sup>

Precisely the same was true for time. There was no such thing as a real flow of time; rather, we involuntarily imagined ourselves (and, only hence, other things as well) as having experienced, and experiencing, a sequence of changing events. This made us think of these events in time, though actually we had merely constructed our own past and present experience through an involuntary representation of our consciousness.<sup>10</sup> The “real” Kant, in other words, had asserted that neither space nor time existed at all; they were mere categories of our subjective consciousness.<sup>11</sup> Vvedensky, in other words, refuted the positivists’ notion of “absolute space,” which Kant had supposedly said we could know without relying on experience.

From this position followed an answer to the question Vvedensky considered central to Kant’s entire enterprise, and which, at any rate, he himself, like his colleagues, felt was crucial and pressing: what was the relation between our conception of space and empirical reality? A significant portion of Vvedensky’s unpublished typescript, *Immanuel Kant (1724–1804)*, based on his lectures at St. Petersburg University, is devoted to Kant’s stance on this issue. Here Vvedensky proposed the following process as a description of a Kantian approach to space:

When we study spatial quantities and their relations, we find these quantities by constructing them in *subjective or imagined* space. After that we find out various synthetic judgments about them, namely geometrical axioms and theorems. And we reply upon everything we find in *imagined space in application* to the space we encounter in experience. In geometry we construct a straight line in subjective, i.e. imagined, space, and become convinced that it is the shortest distance between two points; then we transfer its qualities to straight lines that occur in space that is *given in experience*.<sup>12</sup>

We have the right to make this transfer from subjective space to experience *because space does not exist*, because “the space and time given to us in experience are also subjective, i.e. are our representations, though objectified.”<sup>13</sup> We may, in other words, project our mathematical judgments (e.g. geometry) into the world of real experience because there *is no space* outside of what we think about

it. This seems a fairly idiosyncratic interpretation of Kant's "critical warning" that "objects by themselves are not known to us at all, and that what we call external objects are nothing but representations of our senses, the form of which is space, and the true correlative of which, that is the thing by itself, is not known, nor can be known by these representations, nor do we care to know anything about it in our daily experience."<sup>14</sup> Nonetheless, to Vvedensky, as to his contemporaries, it was specifically the question of the *relation* between synthetic *a priori* judgements and external reality – the question, one might suggest, that Kant himself had sought most to avoid – that constituted the pathos of Kant's philosophy.

Having constructed this particular interpretation of Kant, Vvedensky subjected it to criticism. In conceiving the relation between our mental processes and external reality as a projection of our concepts upon the world of experience (itself subjective), Kant had mistakenly asserted that space did not exist. Actually, had he not been blinded by excessive *rationalism*, he should have said (here Vvedensky seems almost to echo Vladimirskii) that "*we do not yet have the right either to affirm or to deny whether or not space and time exist by themselves, beyond experience, i.e. whether they have objective significance.*"<sup>15</sup> Vvedensky, in other words, was haunted by the idea of there being, somewhere in experience, a real space that might actually be shaped in accordance with our mental constructions of it. The implication of his reading of Kant was quite significant; indeed, he might have good reason for his apparent naive misinterpretation. The implication was: if space and time are purely in our imagination, then, if we *consistently* construct our model of it in a particular way (as did, for example, Lobachevsky), then we can actually, when we project it onto a truly existing reality, *transform nature* in accordance with this model. That is, any mathematical conception of space and time which is *internally coherent* can by definition describe a certain reality. This had been the essence of Kant's "Copernicanism": "So, before Kant, it was assumed, as an explanation of our knowledge of nature, that the things that made up nature rotated, so to speak, around our reason and showed it how to make judgments about them. Kant took up a diametrically opposite point of view, and announced that our mind, so to speak, rotates around things and *tells them how they should exist.*"<sup>16</sup>

Why should Vvedensky's interpretation of Kant, which he makes in an obscure typescript, be of interest to us? First of all, the Kant that appears in this tract is precisely the one Vvedensky presented to his many admiring students: it was his lectures and engagement with his students that were the key to Vvedensky's influence and importance. Substantively, furthermore, both Vvedensky's exposition and criticism of Kant give us a sense of what, in Kant's philosophy, was appealing in the 1890s. As I have read this composition, a Kant who refuted the notion of absolute space, yet who *should have* acknowledged the possibility that a real space – whether Euclidean, Lobachevskian, or other – *might exist*, was laying the groundwork for receptivity to the ideas of modern physics. Indeed, it was only a few years until the theory of relativity completely overturned notions of real space and time. Vvedensky's concern, in a time of immense productivity of and interest in natural science, was not only to discuss the possibility of mathematics and geometry, but also to investigate how our construction of them might affect real properties of nature. Finally, Vvedensky's Kant shared certain characteristics with the Kant of modernist writers and thinkers like Andrei Bely and Pavel Florensky; one wonders whether, in fact, his popular lectures might have had some input into shaping the Modernist Kant.

#### HISTORY: KANT AT KAZAN UNIVERSITY

How specifically Vvedensky had Lobachevsky in mind when he discussed Kant's approach to space and time is difficult to know; I have tried here to show, rather, that the contemporary discussion of Lobachevsky, in which Vvedensky played a key role, productively illuminates aspects of Vvedensky's Neo-Kantianism. In addition, I would like to suggest that Lobachevsky served as a link connecting Vvedensky with a broader tradition of Russian Kantianism in the first half of the nineteenth century – a tradition whose history I would like briefly to sketch here. This history is intimately linked with the University of Kazan, where Lobachevsky was rector from 1827 to 1846.

This tradition of Russian Kantianism is represented, first, by Lobachevsky himself. The closest Lobachevsky ever came to sounding explicitly Kantian, in a body of work that generally sticks very



closely to the specifics of his mathematical proofs, was in the opening phrase of his *New Principles of Geometry*. “In nature we recognize only the movement. Without that, sensual impressions are not possible. Therefore all other ideas, e.g. geometrical, are formed by our reason artificially, being taken from the qualities of movement; and for this reason space by itself, separately, does not exist for us.”<sup>17</sup> This phrase, however, taken together with the overall thrust of his work, was sufficient for many of his latter-day admirers to claim him as a Kantian.<sup>18</sup> Other, circumstantial, evidence of Lobachevsky’s acquaintance with Kant included the remarkable biography of one of his teachers at Kazan, Bronner – who had been everything from a Catholic monk to a physicist, poet, and historian – and, at one time, became completely immersed in the *Critique of Pure Reason*.

Vvedensky, at any rate, seems to have believed that Lobachevsky’s geometry was firmly rooted in Kantian thought. He came up with the rather more convincing argument that Lobachevsky’s system would not have been possible before the formulation of the Kantian theory of synthetic judgments, and in fact depended upon it as an epistemological basis. “It has also become understood that, however great Descartes and Leibniz may have been in mathematics, with their philosophical premises they could have arrived neither at Lobachevsky’s question, nor at his answer. . . . And even British empiricism of the last century provided an insufficient basis for Lobachevsky’s work. It [empiricism] must be supplemented – though implicitly rather than explicitly stated – with Kant’s theory of synthetic judgments, for without this addition the views of Locke and Hume on mathematics, as is well known, are in no way different from those of Descartes and Leibniz.”<sup>19</sup> Kantian epistemology, in other words, was a precondition of Lobachevsky’s geometry.

In any case, Lobachevsky’s knowledge of Kant – although he himself never went abroad, and visited Russia’s capital cities only two or three times in his life – is fully in keeping with the atmosphere of Russian provincial universities of the mid-nineteenth century, and particularly Kazan. If, by the early 1820s, Hegel was lecturing on history in Berlin, and Khomiakov was holding forth in the Moscow salons, mathematicians, scientists, and philosophers at provincial universities in Germany and in Russia continued to derive inspiration from the potentials opened up by Kantian philosophy. Such, for

example, was the Kharkov professor of mathematics, Osipovskii, who in an 1808 address “On Space and Time” had argued, in opposition to Kant, that “the concept of space arises from the impressions of it, which are impressions of our outer senses on our inner being.”<sup>20</sup> It is in this broader provincial Kantian tradition that Vvedensky, in appealing to Lobachevsky, placed himself.

Of all the provincial universities, it was the university at Kazan that, soon after its foundation in 1804, became a center for the reception of Kantian philosophy. Like the other universities established under Alexander I in their early days – Derpt, reopened in 1802, Vilna (1803), Kharkov (1805), St. Petersburg (1819) – Kazan retained close ties with the German intellectual world through the simple predominance of German professors on its faculty. By the 1810s, however, instruction at Kazan University had already passed largely into Russian hands. The discussion around Kant that emerged at Kazan revolved around three local figures: Aleksandr Stepanovich Lubkin (1770/71–1815), professor of philosophy; Iosif Evseevich Sreznevskii (1780–18–), professor of philosophy and instructor of natural law; Gavriil Il’ich Solntsev (1786–1866), professor of the law of ancient and modern peoples. All three came from a clerical background, and only the younger two had any secular education at all – Sreznevskii, at the St. Petersburg Pedagogical Institute after he had completed the course at the Moscow Theological Academy, and Solntsev, who went on from Orel Seminary to study moral and political sciences at Moscow University.

It was Lubkin who was, above all, responsible for the introduction of Kant into the philosophy curriculum of Kazan University. Lubkin’s path to an ordinary professorship at Kazan – a title he finally received just months before his death, and one normally reserved for foreigners – was the complicated one of an obviously talented young man of undistinguished birth. Born into a clerical family at Kostroma, Aleksandr Stepanovich received an early education at the Kostroma seminary, whence he went on to the theological academy in St. Petersburg. Though he was destined for service in the provinces, Lubkin’s abilities kept bringing him out of total obscurity: assigned in 1792 to teach mathematics, German and eventually philosophy at Kostroma seminary, by 1802 he was transferred to the army seminary, becoming its rector and instructor of philosophy.

It was during this period that he composed a treatise on logic, as well as his most important Kantian work – a “Letter on the philosophy of Kant,” published in 1805 in *Severnyi Vestnik*. In 1806, Lubkin married and abandoned his clerical status; his new secular career brought him an inspectorship at the Petersburg pedagogical institute but, only four years later, sent him to Orenburg, where he was acutely miserable, as director of its school system. The hand of fate in the shape of Rumovskii, rector of Kazan University, snatched him from a peripatetic and penurious existence (now with a family of four children on his hands) and installed him, in 1812, as successor to the dull, bureaucratic and poorly-trained German professor Voigt on the philosophy faculty. Lubkin took his appointment seriously (although financial need, as his family grew eventually to twelve persons, prompted him to take a full-time position as inspector of the Kazan gymnasium on the side): his course in logic became a requirement for all 41 students of the entire university, and he taught metaphysics and moral philosophy as well. Lubkin’s major work, a five-part treatise on metaphysics, was composed during this period; in 1815 he made a ceremonial speech at the university, arguing, as in the treatise, for the compatibility of reason and religious faith.

Lubkin’s early death was timely. It was his successors, Sreznevskii and, on the law faculty, Solntsev, who bore the full brunt of the reaction that set in towards the close of Alexander’s reign. In Kazan, the new epoch was embodied in the dread Magnitskii, appointed inspector of education in 1819. Once a favorite of Speransky, Magnitskii had managed to salvage his career through demonstrating an abundance of reactionary zeal. His recommendation for rescuing education in Kazan from the “desolation, all-powerful atheism, complete ignorance of Holy Scripture and the most basic essentials of the Christian faith” he found there was straightforward: destroy the University (“suppress this sewer which is infecting and poisoning the entire country”), and raze the building to the ground. This recommendation was not accepted by the authorities; nonetheless, in the “restructuring” that followed, the professoriate’s attitude to the philosophy of Kant became a litmus test of religious reliability. Sreznevskii, who had been Lubkin’s colleague and assistant, had had the indiscretion to defend Kant in an 1817 public address, affirming Lubkin’s argument that, according to Kant, “because the Christian

religion is the only one that conforms to practical reason, it must be considered as the most perfect." Sreznevskii went on to ask, "Is this to undermine religion and morality and to be atheist?" On the contrary, he continued, Kant's entire system, because it denied the possibility of knowing things in themselves, made the refutation of God and the immortality of the soul impossible as well. The joint effort of pure reason, which supposes their existence, and practical reason, which prescribes belief in them, forces us to admit their indubitability. This effort at reconciliation of faith and reason,<sup>21</sup> however, was insufficient for Magnitskii: Sreznevskii, along with 11 other professors, was dismissed in 1819. With a reputation irreparably damaged by Magnitskii's negative recommendation, Sreznevskii managed only a brief stint at Kharkov University, trying unsuccessfully to get a new degree in Russian history, geography, and statistics; he taught language and literature for four years in an artillery school, only to end his days, ironically, as a monk – thus having gone full circle from the religious to the secular and back again.

Practical reason became the object of a court case in the culminating act of the Magnitskii drama. Gavriil Solntsev had initially won Magnitskii's favor, and was successively promoted from ordinary professor (1817) to dean of moral and political sciences (1819) to rector of the university (1819). Their relations soon soured, however, over the issue of natural law, which Magnitskii wished to eliminate from the curriculum, and which Solntsev taught and defended and which, worse, he believed to have its strongest foundation in the doctrine of Kant: "Only he was able to found it and define its essence, having found in practical reason the legislator of liberty, common source of morality and natural law." Solntsev was indicted and tried at a highly publicized, scandalous university tribunal. The court defined practical reason as the affirmation "1) that natural liberty consists in the right to dispose of one's person, of one's physical and moral capacities as of all one's activities, or 2) that, according to the very idea of liberty and equality, which constitute the personal rights of every man, no one has the right to force someone to do anything against his will," and then concluded that practical reason, thus understood, "is like the serpent who seduced ... Eve ..."<sup>22</sup> Solntsev was deprived of the rectorship and forbidden ever to seek a university post again. Incidentally, in the course of this process

of purification, the posthumous publication of Professor Lubkin's *Metaphysics* was brought to a halt, and all existing copies of the first three parts confiscated and burned.

\* \* \*

When we think about the renewal of interest in Kant beginning in the 1890s, our first tendency is to associate it with the parallel German Neo-Kantian movement, and to assume that the Russian variant is derivative. The story I have told here, I believe, is more characteristic of the history of ideas in Russia by the close of the nineteenth century. When Vvedensky turned to Kant, he was, of course, participating in a movement shared with his German contemporaries. Yet he appealed, no less significantly, and quite naturally, to an indigenous Russian reading of Kant that led him back to Lobachevsky at mid-century, and quite unknown figures like Lubkin, Sreznevskii, and Solntsev even earlier. The story is one of discontinuity – an intellectual inheritance that proceeds in fits and starts, obliterated by Magnitskii's repressions only to be reborn, in a mathematical reincarnation, in Lobachevsky's geometry, and rediscovered, in turn, by Vvedensky at century's end. Lubkin and Lobachevsky are by no means all there is to Russian Neo-Kantianism. Yet, characteristically, only through tracing how better-known influences like Windelband and Rickert became filtered through the "Lobachevskian" Kantianism of an immensely popular teacher like Vvedensky, can we begin to discern the various ingredients of a peculiarly Russian interpretation of Kant at the turn of the twentieth century. These peculiarities of Russian Neo-Kantianism might even explain why, in the 1910s, the joint Russian-German Neo-Kantian journal, *Logos*, had to be published in two separate editions in two different languages: while united in a common task, Neo-Kantians in Russia and Germany drew on different philosophical traditions.

#### NOTES

<sup>1</sup> Vladimir Solov'ev: 'Kant,' in *Entsiklopedicheskii slovar' Brokagauza i Efrona*, v. 27, pp. 321–339.

<sup>2</sup> Z. Arkhimovich: *N. I. Lobachevskii i osnovaniia ego geometricheskoi sistemy. Populiarnoe izlozhenie* (N. I. Lobachevskii and the Foundations of his Geometric System), Kiev, 1895.

<sup>3</sup> A. Vasil'ev: *Nicolai Ivanovich Lobachevsky. Address Pronounced at the Commemorative Meeting of the Imperial University of Kasan, October 22, 1893*, Austin, Texas, 1946, p. v. The particular "European" referred to here is the British mathematician and philosopher, William Clifford.

<sup>4</sup> He insisted, "You can hardly suppose that the many-sided, cultivated Lobachevsky remained indifferent to these questions agitating the spirits of his time. In fact, on the question raised by Kant, Lobachevsky gave weighty utterance with his geometric investigations and proof of the possibility of a strictly logical non-Euclidean geometry." Vasil'ev: *Nicolai Ivanovich Lobachevsky*, p. 12.

<sup>5</sup> A. Vvedensky: *Sud'by filosofii v Rossii* (The Fate of Philosophy in Russia), Moscow, 1898, p. 43.

<sup>6</sup> Vvedensky: *Sud'by filosofii*, pp. 29–30.

<sup>7</sup> See N. Vladimirkii: *O znachenii slova 'prostranstvo' (po povodu otkryitiia pamiatnika N. I. Lobachevskomu)* (On the Meaning of the Word 'Space' (On the Occasion of the Unveiling of the Monument to N.I. Lobachevsky)), Kazan, 1896, p. 9.

<sup>8</sup> Vasil'ev: *Nicolai Ivanovich Lobachevsky*, p. 13.

<sup>9</sup> A. Vvedensky: *O Kante deistvitel'nom i voobrazhaemom* (On the Real and the Imagined Kant) 1895, pp. 18–19.

<sup>10</sup> Vvedensky: *O Kante deistvitel'nom*, p. 19.

<sup>11</sup> Incidentally, Vvedensky consistently made his arguments about space, then simply deriving an analogous position vis-à-vis time in each case – another indication of his concern with Lobachevsky.

<sup>12</sup> A. Vvedensky: *Emmanuil Kant (1724–1804)*, p. 37.

<sup>13</sup> Vvedensky: *Emmanuil Kant*, p. 38.

<sup>14</sup> Kant: *Critique of Pure Reason*, trans. F. Max Müller, New York, 1966, p. 28.

<sup>15</sup> Vvedensky: *Emmanuil Kant*, p. 42.

<sup>16</sup> Vvedensky: *Emmanuil Kant*, pp. 55–56. My italics. In the cultural categories of the time, the perceptual revolutions of both Kant and Lobachevsky were consistently referred to as "Copernican."

<sup>17</sup> Cited in Vasil'ev: *Nicolai Ivanovich Lobachevsky*, p. 15.

<sup>18</sup> Incidentally, Soviet scientists in the 1920s and 1930s used this phrase to prove the opposite – that Lobachevsky was indeed, as they insisted, a "matematiko-materialist." See, for example, N. N. Parfent'ev, 'Naturfilosofia N. I. Lobachevskogo,' *K 125-letiiu Kazanskogo Gosudarstvennogo Universiteta im. V. I. Ul'ianova-Lenina* (On the 125th Anniversary of Kazan State University), Kazan, 1930, p. 39.

<sup>19</sup> Vvedensky: *Sud'by filosofii*, p. 30.

<sup>20</sup> Vasil'ev: *Nicolai Ivanovich Lobachevsky*, p. 12. Osipovskii is also mentioned, in passing, by Vvedensky in *Sud'by filosofii v Rossii*, p. 31.

<sup>21</sup> A fascinating argument for the validity of mathematics dates from approximately this time, as well, and comes from the pen of Professor Nikolskii (*Slovo o pol'ze matematiki*, 1816 [A Word on the Usefulness of Mathematics]): "In geometry, the *triangle* is the first and most simple of geometrical shapes, and the theory of the Church has long employed the *triangle* as symbol of the Lord as supreme geometer and constructor of all creation. . . . Two lines that intersect at a right angle may be considered the perfect hieroglyph of love and justice. Love is the *foundation* of creation, and justice rules over its work without favoring one or another direction. The hypotenuse of a right triangle is the symbol of unity

of truth and peace, justice and love by the intercession of the Mediator between God and men, who has united the earthly with the heavenly, the this-worldly with the other-worldly.” Cited in A. Koyré: *La philosophie et le problème national en Russie au début du XIXe siècle*, Paris, 1929, p. 75.

<sup>22</sup> Koyré: *La philosophie et le problème national*, p. 70.

*Georgetown University*  
*Department of History*  
*Washington, DC 20057*  
*USA*