Font as a category of aesthetics and a means of communication in design, art, architecture

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Abstract. The article briefly describes the history of Old Russian writing in the context of the development of European type culture. The article analyzes the influence of material, technology, features of type design and the level of socio-economic development on the evolution of Cyrillic writing. There is an overview of the development of styles of handwritten writing in Russia from the XI-XVIII centuries till the reform of Peter I. The problem of coexistence and mutual influence of different types of arts within the same style is touched upon on the example of architecture, literature and book graphics. The conclusion is made about the influence of calligraphy on the formation of aesthetic taste, on the ability to solve educational and upbringing tasks, its role, as an ethno-cultural marker.

1. Introduction

The scientific basis for the article are the works of the following authors: E.I. Kirichenko, A.B. Rybakova, V.N. Shchepkina, E.M. Glinternik, D.I. Petrovsky, E.S. Bystrova., I. I. Ptakhova, Y. Gordon, L.I. Pronenko, E.A. Borisova, G.Yu. Sternin, D. Harris, W. Isaacson, N.P. Parfentieva, N.V. Parfentieva. It is necessary to consider the Russian font as a category of communication, as a category of aesthetics and as an ethno-cultural marker.

In prehistoric times people used pictures to convey information at a distance. These drawing writings as a phenomenon of the most ancient form of writing was called pictography in the scientific literature [1]. And although rock paintings are considered a form of primitive art in art history, in fact, ancient people used it as a method of communication [2]. The first alphabet originated in Phoenicia in 1200 BC. In the VIII century BC it was adapted by the Greeks, the Etruscans borrowed the shape of the letters from and then the Romans. All subsequent Western writings have Roman origin [3]. In parallel with the existence of a handwritten font the monumental developed reaching perfection in ancient Rome. Before the invention of book printing only styles changed in European writing technique. But printing technology revolutionized the shaping of letters, although in the beginning the typesetting pages of books continued to mimic the manuscripts. But gradually print engravers developed their own type of signs, not related to handwritten samples. And by the end of the XVIII century. Typesetting became independent of the influence of the manuscript. This was followed by three more technological revolutions: the invention of photographic forms, the emergence of...
phototypesetting and computer publishing programs. Each of the innovations took the font further and further away from the writing material until it became virtual [4].

2. **The origins of Slavic writing**

Epigraphy is an auxiliary historical discipline that studies the content and forms of inscriptions on hard materials. Paleography is a historical and philological discipline that studies the history of writing, the patterns of development of its graphic forms. The category of epigraphy includes inscriptions on coins and seals. At the turn of paleography and epigraphy there are inscriptions on birch bark. Epigraphic explores these sources both paleographically and historically: from the features of handwriting to historical persons or events mentioned in the epigraphic record [5]. Slavic-Russian paleography knows several "revolutionary" eras: the era of replacing the Glagolitic alphabet with Cyrillic (X-XII centuries), the era of South-Slavic influence in Russia (to the XIV-XV centuries), the era of the introduction of the civil alphabet (early XVIII century) [6].

The oldest message about the existence of writing among the Slavs is considered to be the "Legend of the Writings" by the monk Khrabra - a Bulgarian monk who lived at the turn of the 9th-10th centuries. He wrote that when the Slavs were pagans they did not have their own books, therefore they counted and guessed with the help of “devil and cut” [7]. Researchers believe that "lines" and "cuts" are varieties of pictographic tamga and counting writing, known to many people at the early stages of their development. The outlines of "features" and "cuts" are probably due to specific natural materials: birch bark, wood, stone, ceramics.

In 1962 B.A. Rybakov paid attention to the irregular geometric "ornament" on the vessels, which originate from the area of intensive Slavic agriculture in the forest-steppe zone and belong to the "Trojan Ages" (II-IV centuries). Calling this ornament similarly to the monk Brave as "features" and "cuts", the archaeologist came to the conclusion that these are ritual vessels with calendar signs denoting the scheme of the annual cycle of pagan agrarian-magical rites, some of which were later dedicated to Christian holidays. The calendar of pagan prayers consisted of four solar phases: winter solstice, spring equinox, summer solstice. The autumn equinox was timed to coincide with the harvest festival [8].

In 860 in Bulgaria, under Tsar Boris, Christianity was adopted and the Preslav Book School was created. Bulgaria becomes the center for the spread of Slavic writing [5]. In 988, the adoption of Christianity by Ancient Rus contributed to the spread of writing and written culture [9]. From the middle of the IX century. Byzantine missionaries Cyril and Methodius, in order to translate liturgical texts from Greek into Slavic, created the Slavic alphabet - Glagolitic, which became widespread in the lands of the southern Slavs. In the early 50s. independently from each other G. Chernokhvostov in Finland and E. Georgiev in Bulgaria concluded that the Glagolitic alphabet is not a product of the evolution of some alphabet, but the result of the creativity of one person professing Christianity. Most of its letters are based on three main Christian symbols:

1. Cross as a symbol of Christ;
2. Triangle as a symbol of the Trinity;
3. The circle as a symbol of the infinity and omnipotence of God the Father.

For some time the Glagolitic alphabet coexisted in parallel with the Cyrillic alphabet but then it was supplanted by the latter. The Cyrillic alphabet is based on the Greek statutory letter - uncial [9].

The Byzantine influence also affected the design of the first Russian silver and gold coins of the 10th-11th centuries which served as the most important mass media. The first Russian coins performed not so much economic as political functions, their minting was episodic. In the 1960s. of XX century controversy erupted around the coins which was associated with an attempt to read the letters on them; Engovatov N.V. saw in them some letters of the ancient Russian alphabet, preceding the Cyrillic and Glagolitic [10].

According to academician B.A. Rybakov “The essential difference between Russian culture and the culture of the countries of the East and West is the use of the native language. Arabic for many non-Arab countries and Latin for a number of Western European countries were foreign languages, the
monopoly of which led to the fact that the national language of the states of that era was almost unknown. The unity of the national and state language was the cultural advantage of Russia over the Slavic and Germanic countries in which the Latin state language dominated. Wide literacy was impossible there since being literate meant knowing Latin. For the Russian townspeople, it was enough to know the alphabet in order to express their thoughts in writing [11]. Over 500 birch bark letters of the XI-XV centuries were found in Novgorod, confirmed the wide spread of literacy among the townspeople. The villagers remained illiterate for a long time, but in the cities literacy was widespread, as evidenced (apart from birch bark letters) by many inscriptions on household items and the walls of churches [5].

The isolation of feudal principalities in the first third of the 12th century not only did not stop the development of culture but contributed to the following development. All the most important monuments of art and literature were created in the era of feudal fragmentation when its negative features had not yet manifested themselves in full force. The Mongol-Tatar invasion interrupted this development and suspended it for one and a half to two centuries [5].

3. Types of Old Russian writing

In antiquity and the Middle Ages in Europe and Russia were written exclusively with broad-nib pens while in the 16th century invented a metal pen, and the first to use it in 1548 Johann Neudörfer the Elder from Nuremberg [9]. The terms "ligature", "charter", "semi-unust", "cursive" are used in Russian paleography to characterize the Old Russian writing. They switched to paleography from the book-writing practice of the XVI–XVII centuries. There are two main trends in the interpretation of the terms denoting "types of writing". A number of researchers (I.P.Sakharov, A.I.Sobolevsky and others) consider the charter, semi-charter and cursive writing as independent, equivalent graphic phenomena which successively replace each other as the main letter. In the works of later paleographers, the relationship between semi-ustav and cursive writing, which replaced the ustav, is characterized as "peaceful existence". The long-term coexistence of semi-ustav and cursive writing was recognized by all researchers (it lasted from the 14th to the beginning of the 18th centuries, when cursive writing supplanted half-ustav from almost all areas of writing) [12].

The initial letter - in a handwritten book accentuated the beginning of a chapter or paragraph and was an adornment of the initial page of a book that is drawn was not written. In science, its history is divided into four periods. The early period (XI-XII century) is characterized by the predominance of the Byzantine style. In the XIII-XIV centuries the teratological, or "animal" style dominates, the ornament consists of the figures of monsters intertwined with belts, tails and knots. XV century under the South Slavic influence the ornament becomes geometric and consists of circles and lattices. Influenced by the European style of the Renaissance, in the old printed ornament of the XVI-XVII centuries writhing leaves appear, intertwined with large buds of flowers [13].

The charter is the form of the Cyrillic alphabet (from the Slavic word "border", "limit"), in form it resembles the Greek uncial letter of the 9th century from which it comes. It was used until the 15th-16th centuries (the last two centuries - along with the later forms of writing and almost exclusively for the correspondence of books) [9]. It is a slow solemn letter, the letters are vertical, the heavy main stance, subtle additional strokes and serifs. The proportions of the letter are close to the square. Each letter was written separately in several hand techniques [13]. Of the surviving books the most ancient is the "Ostromir Gospel", written by Deacon Gregory. Ostromir was a Novgorod viceroy with Prince Izyaslav Yaroslavich. In 1056-1057 he ordered the Gospel written in statutory letter decorated with multicolored initials and miniatures [5].

Semiustav is a form of the Cyrillic alphabet that took shape in the XV–XVII centuries. South Slavic influence brought to Russia in addition to new ornamental motifs, semi-ustav and ligature. The increased need for books encourages scribes to write faster and more elegantly. The drawing of the letters remains the same, but they acquire a slope, the spaces between the letters are somewhat stretched and reduced, the solemnity remains. The form of the semi-ustav gradually changed by the 17th century. The stands acquire a slightly rounded character, corresponding to the writing hand. The
designation of stresses (forces) and aspiration appears, which mattered when reading the text during services in the church [9].

Cursive writing is the most mobile form of the Cyrillic alphabet. She appears in the era of semi-ustav. It is characterized by loops and strokes that extend freely beyond the line of the line, the individuality of the handwriting is expressed brighter than in the semi-unrest [13]. Cursive writing required a change in the sharpening of the pen. In cursive writing, there is a gradual division of letters into lowercase and uppercase. In addition to the spread of writing, the emergence of cursive writing was also influenced by the change in material: if ink was slowly absorbed on parchment and therefore it was necessary to write accurately, then paper allowed writing more freely [9] and to an even greater extent, cursive writing allow looking for their creative methods of their interpretation [9]. According to Ptakhova I.I., by the XVII century, cursive writing reaches its apogee in its virtuosity and complexity. The new calligraphic style has no analogy in European culture and it seems that this is where the feeling of freedom and national identity is expressed. If the printed Cyrillic alphabet seems to have frozen, then the handwritten font is rapidly changing [13].

According to V.N. Schepkin, cursive writing is a business letter: the charter was used when the letter performed a sacred function, was used to rewrite liturgical books; semi-ustav appeared in connection with the spread of writing to literary monuments; the appearance of cursive writing was evidence of the penetration of writing into the economic and administrative spheres. Researchers unanimously admit that cursive writing originates in the office environment in the XIV century, but no one denies the existence of cursive books, as well as the use of the charter and semi-charter in documents [12].

In Byzantium in the XI century a decorative and solemn letter is developing for the design of the title lines of manuscripts - ligature. In the XIII and XIV centuries using f Byzantine ligature begins to decline, and in the 15th century, it practically disappears. In Russia, it becomes popular in the 15th centuries, and already at the end of the century its stylistic division occurs: Western and South-Western Russia prefer round, and Moscow Russia - geometric ligature [8]. By the end of the 17th century. The ligature has reached its aesthetic perfection [6].

Ligature writing is a letter when adjacent letters are connected together, forming a single complexly composed sign - a ligature - goes back to the very beginning of Slavic writing. The origins of ligature writing are in the Greek uncial of the V—VI th centuries, which reached the IXth century development in the formation of minuscule writing. Ligature writing, over time, enriched with new techniques, having received a further continuation both in semi-ustav and in cursive writing. The ligature was one of the main compositional shaping elements of the ligature. Its function is to transform the string into a continuous and uniform ornament, which in books was used almost exclusively in titles. Decorated, strongly elongated vertically letters were written tightly to each other and often merged into a ligature, where two adjacent vertical lines of different letters were combined into one [9].

In this respect, the Cyrillic alphabet is richer than the Greek alphabet. Cyrillic has 36 characters, of which 26 have vertical masts, and the total number of possible two-digit combinations is 65. In practice, many combinations are impossible, but despite this, the Cyrillic alphabet has 450 two-digit mast ligatures. The Greek alphabet consists of 24 characters, including 12 mast characters, and the maximum number of all combinations is 132. It is impossible to build a system of artistic ligature on such limited material, and the reason for this is rooted in the properties of the Greek alphabet and language. But the Byzantines found a principle that was developed on Russian soil. In Muscovite Russia, the geometric principle of ligature construction, developed into original techniques that informed the art of this font artistic development [5].

The book printing that began in the 1550s in Russia could not satisfy the public needs for liturgical literature. Until the middle of the 17th century. the cost of printing production was comparable to that of a handwritten book. Therefore, in the 1580s, in Solvychegodsk, industrial merchants Stroganovs create a scriptorium. In 1604, a masterpiece of handwritten book art appeared there, which is a kind of methodological manual that received a number of titles in the scientific literature: "Alphabet and
sample quotes", "Calligraphic original", "Book-written original". In it, each letter of the alphabet is
written out on a separate page in all kinds of cursive writing (up to 80), various half-rules are given.
Samples of initials and headpieces, links for titles and monograms of Nikita Stroganov are given. The
"old printed" type of ornament prevails, but there are also woven floral ornaments [14].

The reform of Peter I turned the development of the East Slavic type into a common European
channel. Since that time, further changes in the form of the Cyrillic alphabet have kept pace with
European styles. The civil script, approved by the tsar in 1710, influenced the handwritten one. The
new typeface was created specifically for printing secular (civil) literature and was named "civil". It
was based on samples of the handwritten Cyrillic alphabet of the late 17th century and Renaissance
serif. Church books continue to be printed in semi-ustav and in the Church Slavonic language in the
20th century [13].

4. Calligraphy and typography in the XIX-XX centuries.
Architecture is considered a philosophical style-forming art. The picture of the world represented by it
due to the abstractness of architectural forms has maximum generalization and expresses the most
fundamental features of the world outlook of a certain period of time, leaving out of the brackets
partial differences [15].

According to Kirichenko E.I., the term "eclecticism" is used terminologically to designate a
specific historical period in the development of architecture and is devoid of an evaluative touch.
Eclecticism inherits classicism and precedes modernity. Chronologically in Russia it falls on the end
of the 1820s - 1890s and includes two stages - romanticism and historicism and chronologically
following one after the other [16]. The Russian style as one of the manifestations of historicism is the
only one in the second half of the 19th century style direction which has an all-encompassing
character. In terms of its prevalence and popularity no other direction of architecture and applied art
can compete with it [17].

The "Russian" style did not manifest itself in different types of fine arts at the same time. At the
beginning it declared in architecture while not affecting the decoration and organization of the interior.
Several decades later this style appeared in interior design and applied arts. This phenomenon
penetrates into the graphics even later in the 80s of the XIX century. The apogee of the "Russian" style
in architecture falls on the second half of the 19th century but chronologically its influence persists
until the revolutionary events of 1917 which interrupted its natural development.

At the turn of the fourth and fifth decades of the XIXth century there is a revision of the "table of
ranks" in the field of art. All arts including architecture are oriented towards reality, descriptiveness,
enlightening spirit of literature. Aesthetic norms, criteria, concepts are created based on literature and
based on it. Art critic Stasov V.V., who in the 1860s headed this movement claims that the power of
new music, painting, architecture - antipodes of academicism - is in following literature. In the specific
conditions of Russia with its political oppression, censorship and autocratic system, art became the
most important means of social struggle, and the criterion of its usefulness was expressed in
submission to the tasks of social transformation [18].

The preparatory sketches for his projects starting from the decor were made by the architect I.P.
Ropet. He rarely has a drawing of an entire building or object but decorative motifs vary. And this is
not the uniqueness of the architect but a consequence of the peculiarities of the architectural thinking
of the era. For example, he used many inscriptions in ancient Russian fonts in the project of a new
building for the Public Library (1891), the facade of which was supposed to be faced with sandstone,
porphyry, white brick, majolica on a gold background, decorated with turrets, trellises, and platbands.
With the picturesque composition and the abundance of texts containing information on the history of
education and book printing in Russia, the project resembled the title page of an old manuscript. So
"reality" understood literally as an expression on the facade of the image of a library building came
into conflict with the functionality and practice of enlightenment [18].

It's interesting that this "architectural thinking" also influenced graphics. For example, an
abundance of ornamental interpreted forms, starting from the methods of presenting architectural
projects are often found in posters, booklets, menus and other advertisements in the 1880s – 1890s. [19]. And also on the design of paper banknotes. Since the 80s, they began to depict massive architectural details in the "Russian" style [10]. In general, the decline of 19th century architecture. It is most clearly reflected in the buildings of the "Russian style", which are characterized by excessive didacticity, illustrativeness, the measure of concreteness of which exceeded the possibilities due to the specifics of the artistic language of architecture [20].

Noting the commonality of Russian Art Nouveau with the phenomena of the artistic culture of the West at the turn of the XIX-XX centuries contemporaries paid attention to its pronounced national features, born of the social atmosphere of Russian life of that time and its cultural tradition. Since the middle 1880s, the "national-romantic" or "neo-Russian" style began to assert itself by active searches in the field of poetics and stylics and for the first time covered all types of art [21]. Artist Vasnetsov V.M. became the founder of the neo-Russian style. He found an image and a way of reviving the new-city-Pskov architecture - one of the main prototypes of stone buildings in the neo-Russian style. And thanks to E.D. Polenova the term "printing" has become associated with the concept of graphics and the requirements dictated by the printing method have turned into an artistic device [17].

Book design by the standards of the 19th century was a secondary art as it developed in accordance with the norms of mass art. Recognition of the value of applied art equal to easel at the turn of the XIX-XX centuries occurs in the process of changing artistic tastes and updating the artistic language. Bilibin I.Y. plot and stylistically gravitates towards the line of Vasnetsov - Polenova. Bilibin sees Russian folk art as an integral phenomenon: "... fairy tales, epics, spiritual verses are connected in one whole with embroidery, heels, wood carvings, with folk architecture, with folk pictures." The shaping value goes to the line. In the words of Bilibin himself: "Understanding the term “graphics ” as that branch of line and book drawing where the center of gravity falls on the processing of the line itself (the art of “ beautiful line ”, as Bakst said) is an understanding mainly Russian (...) Our understanding graphic art of the early XX century is associated with great discipline and great linear canonicity. Free line drawing, where the line itself was not cultivated, was not considered graphic "[17].

At the origins of modern calligraphy was the "first designer" founder of the "Arts and Crafts Movement" Englishman William Morris (1834-1896). He studied medieval manuscripts and in 1893 published the theoretical work “The ideal book”, which influenced calligraphers and typographers around the world. By that time, the theory and practice of handwriting were all but forgotten. Medical student Edward Johnston is called the "Father of Modern Calligraphy". In 1897 he began to study old manuscripts and rediscovered the principles of calligraphy finding out that the shape and character of letters depend on the pen, the width of the stroke is determined by the angle at which the instrument is located to the line, the oblique cut of the pen allows you to make both wide and thin strokes. Johnston has revived the forgotten techniques that have become the property of calligraphers. Since 1889, he has been teaching at the London Central School of Arts and Crafts, teaching students uncial, semi-uncial and Carolingian minuscule, which has become his "main font" in practice and teaching [22].

5. Conclusion
Calligraphy according to Hermann Zapf is the most intimate, personal, spontaneous form of expression. Like a fingerprint or a voice, it is unique for each person [22]. The public demand for a unique design product that can evoke an emotional connection with the consumer gives calligraphy a chance to defend its position in the modern, digitally saturated world.

The phenomenon of the popularity of calligraphy at the beginning of the XXI century goes beyond a passing fashion phenomenon. With commercial potential and signs of spiritual practice, while remaining an object of modern graphic design and art, calligraphy draws on the cultural heritage of humanity. It can be the basis for both self-contained art and applied design, and it can even be used as a method of education or therapy. In addition, calligraphy can have an indirect impact, contributing to scientific and technological progress.

For example, Walter Isaacson (biographer of Steve Jobs) believes that it is no coincidence that all Apple products organically combine technical solutions, sophisticated design, ergonomics, clarity and
simplicity. It was Jobs S. who thought out an innovative graphical solution for the user interface, largely due to the skills of sophisticated, artistic perception that he acquired in the calligraphy course [23]. But in addition to solving aesthetic problems, calligraphy plays the role of an ethno-cultural marker, therefore the disappearance of this type of creative activity, despite the development of digital technologies seems unlikely to us.

References

[1] Bogdesko I.T. 2005 Calligraphy (SPb.: Agat)
[2] Hembri, Ryne 2008 The most complete reference. Graphic Design (Moscow: ACT: Astrel)
[3] Harris, David 2019 The Art of Calligraphy: A Practical Guide to Techniques and Techniques (Moscow: Mann, Ivanob and Ferber)
[4] Gordon Y 2006 Kliga about letters from Aa to Ya. (Moscow: Publishing House of Art. Lebedev Studio)
[5] Rybakov B A 1984 From the history of culture of ancient Russia (Moscow: Publishing house of Moscow State University)
[6] Shcheplkin V N 1967 Russian paleography (Moscow: Published by A. N. USSR, Department of Literature and Language, Commission on the History of Philological Sciences, Publishing House "Nauka")
[7] Vilensky S G 1901 The Legend of the Chornorizets Brave about the Slavic writings (Odessa: Publishing House "Economic")
[8] Rybakov B A 1987 Paganism of Ancient Rus (Moscow: Published by A. N. USSR, Department of History, Order of the Red Banner of Labor Institute of Archeology, Publishing House "Nauka")
[9] Petrovsky D I 2016 Calligraphic history of Russia and Western Europe. Broad-nib pen writing (SPb.: Publishing house "Khimizdat")
[10] Melnikova A S, Uzdenikov V V, Shikanova I S 2000 Money in Russia. The history of the Russian monetary economy from ancient times to 1917 (Moscow: Strelets Publishing House)
[11] Rybakov B A Culture of Rus Reader (Texts on the history of Russia) comp. Averyanov L.Ya. https://studfiles.net/preview/2794924/
[12] Bystrova E S 2011 Cursive writing in Russian paleography Photography. Picture. Document. Historiography and bibliography (St. Petersburg: Publisher: State Museum and Exhibition Center Rosfoto) 2 (2) 49–60
[13] Ptakhova I I 1997 Simple beauty of the letter (Saint Petersburg: Rus. Graphics)
[14] Parfentiev N P and Parfentieva N V 1993 Usolskaya (Stroganov) School in the Russian Music of the XVI—XVII Centuries (Chelyabinsk: Kniga)
[15] Kirichenko E I 2001 Russian urban planning art. Urban planning in Russia in the mid-19th - early 20th centuries. Research Institute of Theory of Architecture and Urban Planning (Moscow: Progress-Tradition)
[16] Kirichenko E I 1988 Romanticism and Historicism in Russian Architecture of the 19th Century (On the Question of Two Phases of the Development of Eclecticism) Architectural heritage. Russian architecture. VNII of theory of architecture and urban planning (Moscow: Stroyizdat) 36 130–143
[17] Kirichenko E I 1997 Russian Style. Searches of Ways to Express the National Identity. Folk and Nationality. Traditions of the Ancient Russian and Folk Art in the Russian Art of the XVIII — the Beginning of the XX Century (Moscow: AST-LTD Publishing house)
[18] Kirichenko E I 1982 Russian Architecture of 1830 — 1910 (Moscow: Art)
[19] Gliinternik E M 2001 Historical self-determination of graphic design in the project culture of Russia (1880 - 1980's) Thesis for a Doctor of Arts degree (St. Petersburg)
[20] Kirichenko E I 1972 Architect I. P. Ropet Architectural heritage (Moscow: Stroyizdat) 20 85–93
[21] Borisova E A and Sternin G Yu Russian Modern (Moscow: Galart, AST-LTD)
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