

Andrew Schumann

**PREFACE:
LOGIC IN BELARUSIAN THINKING**

Belarusian culture and Belarusian philosophy are terra incognita for Europeans. This special issue of *Studies in Logic, Grammar and Rhetoric* is devoted to Belarusian philosophy and the topic of rationality in Belarusian thinking. The goal of the issue is to tell about Belarusian logical and philosophical ideas. In the Preface, I would like to show the framework and context of modern Belarusian philosophy and its genesis.

Modern-day Belarus is an isolated country but in the past it was a highly-developed European state. The first Belarusian state was founded in the 12th century and was called the Grand Duchy of Litva. Its territory grew from the Duchy of Novaharodak (Navagrudak in modern Belarus). The former name of the Belarusian lands is Great Litva. The Belarusians (more precisely, the inhabitants of Central and Western Belarus) named themselves “Litwiny” (in Modern Polish the word Litwiny means Lithuanians). For example, all peasants of the Minsk area named themselves “Litwiny” up to the beginning of 1950s.

The Grand Duchy of Litva (its complete name is the *Grand Duchy of Litva, Russia and Žamojcia*; in Old Belarusian (the chancellery language of this state): *Wialikaje Kniastwa Litowskaje, Ruskaje, Žamojckaje*; in Modern Belarusian: *Wialikaje Kniastwa Litouskaje, Ruskaje, Žamojckaje*; in Polish: *Wielkie Księstwo Litewskie*; in Latin: *Magnus Ducatus Lituaniae*) was an eastern and central European state from the 12th–13th century until the 18th century. It was founded by Litwins, one of the Baltic tribes, whose initial lands covered the western and northern parts of modern Belarus and the southern part of modern Lithuania. The Grand Duchy of Litva covered the territory of present-day Lithuania, Belarus, Ukraine, Transnistria and parts of Poland and Russia, during the period of its greatest extent in the 15th century and was the largest state in Europe. This state included three initial large areas:



Figure 1. The map of the Grand Duchy of Litva, Russia and Żamojcia from G. Mercator's Atlas

1. Litva or Black Russia (Western Baltic tribes of Central and Western Belarus – Litwiny, Yatwiagi, Dainova, Mazury, which occupied almost all of Central Belarus, the Minsk and Vilna (Vilnius) areas). The similarity between Slavonic and the language of Litwiny caused further assimilation between the Slavs and Litwiny (Western Balts). Since the 17th century, this region was Polonized and it is partly that up until now.
2. White Russia (the Slavic tribe Rusiny occupied areas of Vitebsk, Mogilyov, Kursk, Smolensk, Bryansk).
3. Żamojcia or Samogitia (modern Lithuania, Eastern Baltic tribes – Żemoity and Aukštaity, whose language rather differed from the Slavic language while the language of Western Baltic tribes (Litva) was similar to Slavonic). The modern Lithuanians were named Żemoity. They obtained the name Litwiny (Lithuanians) only in the 1840s to 1860s. Żemoity did not play a significant role in the Belarusian state, for example, they were the latest pagan people in Europe to become Christian.

The modern-day Baltic ethnos Litwiny represents 60–70 per cent of modern Belarusians and the Slavic ethnos Rusiny 30–40 per cent of them. The name Belarusians was first used only in the 1840s to 1860s when the Russian term “Litvarussians” (in Russian “Litovco-Russy”, this term was used after Catherine II, the Empress of Russia) was gradually replaced by “Belarusians” (in Russian “Belorussy”) because the term Litva (Lithuania) was in disgrace after the Belarusian Uprising from 1830 to 1831 against Russification.

Vilna (Vilnius) was the capital of the Grand Duchy of Litva and it had a Belarusian (non-Lithuanian) population. This town was the cultural center of Great Litva. In 1568, Belarusian nobility (szlachta) asked the Jesuits to open an academy in Vilna. The following year, Walerian Protasiewicz, the bishop of Vilna, started the Vilna Academy (*Almae Academia et Universitas Vilmensis Societatis Jesu*) which became one of the oldest universities in Northern Europe. Initially, the Academy had three divisions: the humanities, philosophy, and theology. On April 1st, 1579, the Grand Duke of Litva and King of Poland, Stefan Batory, granted it equal rights as the Jagiellonian University of Kraków. His edict was approved by Pope Gregory XIII’s bull of October 30th, 1579. The first rector of the Academy was Piotr Skarga. He invited many notable scientists from all over Europe. In 1575, the Belarusian magnate, Mikołaj Krzysztof Radziwiłł, and Elżbieta Ogińska sponsored a printing house for the Academy, one of the first in the region. The printing house issued books in Latin and Polish. By 1823, the Vilna Academy was one of the largest in Europe; the number of students exceeded that of Oxford University. In 1832, after the Belarusian Uprising, the Academy was closed by Tsar Nicholas I of Russia.

In the Vilna Academy, the *first Belarusian philosophical school* appeared, in which many logicians carried out their researches. The most valuable and monumental work of logic was written by the Belarusian-Polish thinker Marcin Śmiglecki (1564–1618), its title was *Logica selectis disputationis illustrata et in duos tomos distributa* (1618). This book was published in four editions in Oxford in the 17th century. Wojciech Tytkowski (1624–1695) and Adam Krasnodębski (1645–1701) were other logicians of the *Vilna Philosophical School* in that century. Furthermore, using some ideas of Wolff, the other Belarusian-Polish thinker, Kazimierz Narbutt (1738–1807), wrote a textbook of logic published in Vilna in 1769. Jan Śniadecki (1757–1830) was the best known and most adept of rational philosophy and the Belarusian-Polish Enlightenment in that school.

In these circumstances, the existence of both the Commonwealth of the Kingdom of Poland and the Grand Duchy of Litva, the representatives of

the Vilna Philosophical School may be interpreted both as Belarusian and as Polish. For some logical ideas of Anioł Dowgird (1776–1835), one of the famous representatives of that school, see the paper submitted for this issue by the Dominican Brother (the Brother of Ordo Praedicatorum) Piotra Rudkouski, the Magister of Philosophy (Jagiellonski Uniwersytet) and the Magister of Theology (Papieska Akademia Teologiczna).

Belarusian legal documents were called the Statutes of the Grand Duchy of Litva and they were a great achievement of Belarusian law. They were written in Old Belarusian during the 16th century and are among the first European constitutions and law codes. They have served later as an etalon to other European nations.

Old Belarusian (the Ruthenian language) was used in the Grand Duchy of Litva as a chancery language, i.e. as an official state language, for the state chancery, legal, diplomatic and judicial needs until the 17th century. In 1696 it was replaced with the Polish language, more commonly spoken by the Belarusian magnate families (Sapieha and Radziwiłł clans) and the major Belarusian szlachta (nobles). In the period of the existence of the Commonwealth of the Kingdom of Poland and the Grand Duchy of Litva (in Polish “Rzecz Pospolita Polsko-Litewska”), many Belarusian nobles were Polonized and only the poor and middle classes used Belarusian (but some of the latter also tended to use Polish for “prestige”). However, despite the Union and integration of the two countries, for nearly two centuries Belarus continued to exist as the Grand Duchy of Litva in the Polish-Litvanian Commonwealth, retaining separate laws. The Grand Duchy of Litva retained much autonomy and was governed by a separate code of laws called, as we said, the Statutes, which further continued to codify both civil and property rights.

The Polish-Litvanian Commonwealth caused the unification of the mostly Orthodox Grand Duchy of Litva with the mostly Catholic Poland which led to liberalization of the religious problem. The gentry, with time, started to adopt Catholicism while the common people by large remained faithful to Eastern Orthodoxy. In 1595, the Orthodox Hierarchs of Kyiv signed the Union of Brest, breaking their links with the Patriarch of Constantinople and placing themselves under the Pope of Rome.

Eventually, by 1795, the Commonwealth of the Kingdom of Poland and the Grand Duchy of Litva was partitioned by its neighbors. As a result, a new period in Belarusian history started, all its lands were annexed by the Russian Empire. The national cultures were repressed due to the policies of Russification, which included, as an example, the return to Orthodox Christianity.



Figure 2. Mikołaj Krzysztof Radziwiłł and Tomasz Makowski's map of the Grand Duchy of Litva, Russia and Żamojcia. Amsterdam. 1613. Fragment

The Russian Orthodox Church in Belarus is an important canal for Russification in modern times, too. For instance, all Orthodox catechization in modern Belarus is only in the Russian language.

In the Russian Orthodox Church there are no saint intellectuals, but this Church has a unique category of saints: the holy fools for Christ's sake, who in the Byzantine tradition were called $\sigma\alpha\lambda\omicron\iota$ and in Russia are known as iurodivye. Their madness allowed them not only to participate in profane

life but also to speak “without control”. Holy fools have been portrayed in numerous Russian Orthodox hagiographies. The freedom of behavior of the holy fools derives from their saintly status: they stand above, or rather outside, all communal laws and social regulations.

According to Orthodox Christianity, knowledge is not important for Christian life. Therefore a rational education is an unnecessary and dangerous surplus. The first secondary school was founded in Russia only in 1615 in Kyiv. It was called the Kyiv-Brotherly School. Later, it was transformed into an influential educational center (in the absence of the others) and on its base the Kyiv-Mohyla Academy was founded in 1701. It was the first higher educational institution in Russia.

Also, in the Russian Orthodox Church, the logical studies had no application in theology. Perhaps the theological works by Fr. Pavel (Paul) Florensky were an exception to the rule. He was the first, and probably latest, Russian Orthodox theologian who read Russell & Whitehead’s *Principia Mathematica* (1910–1913) and implicitly proposed to use formal logic in Orthodox theological studies. Florensky published a lot of interesting works on philosophy, theology, art theory, mathematics, and electrodynamics. The best known Florensky work is *The Pillar and Ground of the Truth: An Essay in Orthodox Theodicy in Twelve Letters* [8]. While much of this book was completed in 1908, it was not published until 1914 and was not fully translated from Russian for many years.

After the closing down, by the Bolsheviks, of the Sergievo-Posad Church (1921) where he was the priest, he moved to Moscow under the recommendation of Leon Trotsky to work on the State Plan for Electrification of Russia (GOERLO). According to contemporaries, Florensky, in his priest’s cassock working alongside other leaders of the Government department, was a very astonishing sight. Evidently, such a person had to be arrested by the Bolsheviks. Indeed, in 1933 he was arrested and sentenced to ten years in the labor camps. In 1937 he was sentenced by an extrajudicial NKVD troika to execution and was shot immediately.

Florensky proposed to construct a **formal logic of antinomies** that could be applied to Orthodox theology. He believed that Orthodox Christianity is an inconsistent but non-trivial theory and a formal logic of antinomies allows to explicate the inconsistent content of Christian dogmas. As we can see, Fr. Florensky was one of the founders of present-day paraconsistent logic.

In the words of Kant, he considered the inferences of pure reason as antinomies. Florensky stated that there are self-referential sentences A such that both A and non- A are true. These sentences are called by him the

truths or antinomies: “each truth has to be a non-conditional formula” and “the truth is a self-inconsistent sentence” [8]. Florensky’s instance on the self-inconsistent sentence was the following sceptic expression ($\epsilon\pi\omicron\chi\eta$):

$$\begin{cases} I \text{ affirm nothing;} \\ I \text{ do not affirm that I affirm nothing.} \end{cases}$$

Nowadays, the Liar sentence is used more often as an example of the self-inconsistent one. Let us remember the Liar sentence: “*This sentence is not true*”. There are two options: either the sentence is true or it is not. Assume that it is true and then what it says is the case. As a result, the sentence is not true. Suppose, on the other hand, that it is not true, then this is what it says. Hence, the sentence is true. In either case it is both true and untrue.

According to Florensky, the antinomy is formulated so: “If the antithesis implies the thesis and the thesis implies the antithesis, then the conjunction of thesis and antithesis, in the case that it is not false, is an antinomy” [8]. Florensky formalizes this reasoning in the framework of Russellean propositional language as follows:

$$-p \supset p. \cap .p \supset -p : \supset : p \cap -p. \cap . - \Lambda = P,$$

where Λ is a contradiction (as an example, $\Lambda := p \cap -p$), P is a sign for antinomy. In two-valued logic we see that the expression $-p \supset p. \cap .p \supset -p : \supset : p \cap -p. \cap . - \Lambda$ is a true proposition.

Each Christian dogma has the form of an antinomy. For instance, the two natures of Christ (human and divine) are on the first hand unmerged and unchanged ($\acute{\alpha}\sigma\upsilon\gamma\chi\acute{\upsilon}\tau\omega\varsigma$ και $\acute{\alpha}\tau\rho\acute{\epsilon}\pi\tau\omega\varsigma$) and on the other hand, unseparate and inseparable ($\acute{\alpha}\delta\iota\alpha\iota\rho\acute{\epsilon}\tau\omega\varsigma$ και $\acute{\alpha}\chi\omega\rho\acute{\iota}\sigma\tau\omega\varsigma$). Thus, the dogma, including inconsistent content, shows the truth. According to Florensky’s opinion, both faith in dogmas and divine love allow us to solve the dogma’s antinomical nature: *Finis amoris, ut duo unum fiant*, as he wrote.

Unfortunately, the hierarchs of the modern Russian Orthodox Church do not show respect for Fr. Pavel Florensky and his ideas. For example, in Moscow on May 14th, 1995, the known Orthodox fundamentalist Fr. Oleg Stenjaev, and the Archbishop of Istrina, Vicar of the Diocese of Moscow Arsenii Yepifanov (the friend of Patriarch Alexius II), burnt books of Vladimir Solovev, Fr. Sergij Bulgakov, and Fr. Pavel Florensky in a court yard of the Orthodox temple. This event was broadcast on Russian TV.

Notice that the paper submitted by Assoc. Prof. Ihar Padporyn, the head of the Department of Philosophy and History at the Belarusian State Agrarian Technical University, is dedicated to the topic of Orthodox rationality.

For the first ten years of the Soviet regime, the national cultures of Belarus and Belarusian language enjoyed a significant revival boost. This was, however, soon tragically ended during the Great Purge, when almost all prominent Belarusian intellectuals were executed (many of them buried in Kurapaty) and thousands of common Belarusians were deported to Asia. Belarusian orthography was Russified and the use of Belarusian language was discouraged as exhibiting antisoviet attitude.

Bolsheviks falsified Belarusian history and tried to change the Belarusian identity. They made Belarusians forget their own history connected with the Grand Duchy of Litva and they continued the Russification of Belarusians.

However, Belarusians were able to preserve their national identity up until today: “Belarusian people as a whole have been losing their national ‘elites’, szlachta, clergy, citizens, all people who by social status, language, belief, style of life, thoughts and senses were aliens for it, but they haven’t lost the specifications that differentiate them from other nations yet” [26].

The dictatorship in the Soviet Union did not allow humanities to develop outside the control of the governing political structures. This thought control caused the absence of critical thinking in social life. As a result, instead of critical thinking, the system of double standards developed in the Soviet people. Recall that such a system is called ‘doublethink’ [17]. So, Orwell writes: “Doublethink means the power of holding two contradictory beliefs in one’s mind simultaneously, and accepting both of them” [17].

Bolsheviks emphasized the difference between conventional (Aristotle’s) logic, which dated from the ancient times, and the logic introduced by Marx. The latter reflected on the subject matter, substance and evolution of what the logic applies to, and it is, in their view, therefore more adequate for the process of thinking.

Let us remember that the Greek philosopher Aristotle laid down three basic laws of logic: the *principle of identity* ($A = A$), *of contradiction* (A cannot be B and non- B), and *of the excluded middle* (A is either B or non- B ; there is no middle alternative). In modern logic the first principle is understood as the constraint of the recursive definition of well-formed formulas that allows, as an example, to use the substitution rule. The second principle is seen as the constraint of truth valuations, mapping well-formed formulas to the set of truth values (in this case a formula obtains a unique truth value by the truth valuation). The third principle is understood as the constraint of the exclusiveness of truth values (their intersections have to be empty).

According to Bolsheviks (Lenin, Trotsky, Stalin), the logic based on Aristotle’s three laws, called by them the **formal logic**, has its limits. They

affirmed that when dealing with complicated events (movement, change, and contradiction), formal logic becomes a totally inadequate way of thinking. In such circumstances they proposed the so-called **dialectical logic** as the logic of contradictions and changes. This logic had to explain that there are no absolute or fixed categories in nature or society and there are contradictions in thought itself. Dialectical logic satisfied the following three laws:

1. The *law of the transformation of quantity into quality and vice versa*. This law expresses the fact that change in nature and society does not simply involve a slow and continuous increase or decrease in the growth of things, but assumes that new qualities emerge after the increase or decrease of quantities at a certain point.
2. The *law of the unity and struggle of opposites*. According to this law, the contradiction is the source of all movement and life. Change arises from and within things as a necessary part of their development.
3. The *law of the negation of the negation*. Negation involves the movement of something from an old stage to a new and higher stage, so that the elements of the old are carried forward and reworked into the new. This whole process can be best pictured as a spiral, where the movement comes back to the position from which it started, but at a higher level. In other words, historical progress is achieved through a series of contradictions, therefore when the previous stage is negated, it does not represent its total elimination.

Evidently, dialectical logic was a pseudological knowledge. Its goal was to explain Soviet inconsistent thinking and to justify the double (everyday and socially-proclaimed) standard of the Soviet morality and Orwell's doublethink in the Soviet social practice. The doublethink that, in Orwell's words, means "to know and not to know, to be conscious of complete truthfulness while telling carefully constructed lies, to hold simultaneously two opinions which are cancelled out, knowing them to be contradictory and believing in both of them, to use logic against logic, to repudiate morality while laying claim to it, to believe that democracy was impossible and that the Party was the guardian of democracy, to forget whatever it was necessary to forget, then to draw it back into memory again at the moment when it was needed, and then promptly to forget it again; and above all, to apply the same process to the process itself. That was the ultimate subtlety: consciously to induce unconsciousness, and then, once again, to become unconscious of the act of hypnosis you had just performed. Even to understand the word 'doublethink' involved the use of doublethink" [17].

Dialectical logic had a lot of applications in Soviet ideology and humanities, but it could not be used in scientific reasoning. (For this reason, after the death of the Soviet Union that ‘logic’ died too.) In the meantime, for explications and explanations of scientific reasoning, the so-called **content-genetic logic** was constructed. The Soviet logicians proposed it, taking some ideas of the German philosophers Kant and Hegel and it was built as a science with the highest evidence. This logic is essentially characterized as follows:

1. *Thought is identified with reflection and reflexivity*, that is, with psychic activity in the course of which a person gave himself an account of what he was doing, and how, and he became aware of all the schemas and rules by which he acted. The sole task of logic is then to make simpler the ordering and classifying of the corresponding schemas and rules. Every individual could discover them for himself in his own consciousness because, even without any study of logic, he was guided by them (only not, perhaps, systematically). Therefore “logic of the real basis for the forms and laws of thought proved to be only the aggregate historical process of the intellectual development of humanity understood in its universal and necessary aspects [i.e. in its reflexivity aspects – Sch. A.]” [9].
2. While mathematical logic describes the inference rules (i.e., it understands thinking as a system of automatic inference), content-genetic logic understands *thinking as permanent activity* or practice. This activity is initial and basic; it is not an object or thing, nor is it a psychological process. Thinking is a foundation of each social or psychological activity (thought, language, and individual psychology are derivative of thought-activity). As stated adepts of content-genetic logic, the genesis and evolution of thought, language, and the individual follow the logic of ascending from abstract to concrete (the logic reflected in Marx’s *Capital*). “The whole history of humanity was correspondingly also to be considered a process of the ‘outward revelation’ of the power of thought, as a process of the realization of man’s ideas, concepts, notions, plans, intentions, and purposes, as a process of the embodying of logic, i.e. of the schemas to which men’s purposive activity was subordinated” [9]. So, logic has to be a *history of science*: “The subject matter of logic then proved to be those really universal forms and patterns within which the collective consciousness of humanity was realized. The course of its development, empirically realized as the history of science and technique, was also seen as that ‘whole’ to the interests of which all the individual’s separate logical acts were subordinated” [9].

3. The *thought-activity* studied in content-genetic logic can not be totally algorithmized, but *may be partially technologized*. Therefore logic is understood as technical knowledge, but it is not considered as mathematical (deductive) knowledge. The schemas of that logic are not universal, they appear contextually within the concrete scientific discipline that the content-genetic logic is applied to. “The subject matter of logic was no longer the abstract identical schemas that could be found in each individual consciousness, and common to each of them, but the history of science and technique collectively created by people, a process quite independent of the will and consciousness of the separate individuals although realized at each of its stages precisely in the conscious activity of individuals (...) It was merely a matter of this, that the schemas of cultivated thought (i.e. of the processes taking place in the consciousness of the individual) should coincide with those of the structure of the science in the movement of which the individual was involved, i.e. with the ‘logic’ dictated by its content. If the schema of the activity of a theoretician coincided with that of the development of his science, and the science was thus developed through his activity, Hegel would attest the logicity of his activity, i.e. the identity of his thinking with that impersonal, universal process which we also call the development of science” [9].

Prof. Ewald Ilyenkov is one of the founders of content-genetic logic. He wrote: “Thus the existing logical theories did not correspond to the real practice of thought, and thinking about thought (i.e. logic) consequently lagged behind thinking about everything else, behind the thinking that was realized as the science of the external world, as consciousness fixed in the form of knowledge and things created by the power of knowledge, in the form of the whole organism of civilization” [9]. On forming content-genetic logic, the following Soviet scientists also showed a significant influence: Prof. Aleksandr Zinoviev [28], Assoc. Prof. Gregory Shchedrovitsky [21], Prof. Merab Mamardashvili [16], and many others. The most known Russian informal scientific community in which content-genetic logic is studied is called the Moscow Methodological Circle. Uladzimir Mackiewicz (see his paper in this issue) is a well-known Belarussian follower of that Circle. (Notice that Mackiewicz was the moderator of the first TOC show on Belarussian TV.)

Soviet content-genetic logic is similar to content logic building in the framework of the German transcendental philosophy (for logical ideas of that philosophical tradition see [22]).

Adepts of content-genetic logic agreed that their logic has to be regarded as a true method alternative to mathematical logic, i.e. as a science with the

highest evidence [6], [19]. While world-wide science continues Newton and Locke's tradition (the orientations of that tradition are well explicated in the modern UK philosophy, namely, in philosophical logic and mathematical logic), the Soviet scientists decided to establish the own scientific tradition with the orientations explicated in content-genetic logic.

Content-genetic logic is based on Wygocki's scientific results. Prof. Leo Wygocki (Lev Vygotsky) (1896–1934) is a well-known Belarusian psychologist who was born in Orsha (a town in Belarus) and worked in Moscow. He showed experimentally that thought is not developed in parallel with speech in the general case: “The most important fact uncovered through the genetic study of thought and speech is that their relationship undergoes many changes. Progress in thought and progress in speech are not parallel. Their two growth curves cross and recross. They may straighten out and run side by side, even merge for a time, but they always diverge again. This applies to both phylogeny and ontogeny” [27]. It follows from this that thought cannot be reduced to speech, that is human logic cannot be reduced to mathematical language. Therefore, logic has to be regarded as a study of the origins of knowledge (not as a study of ready-made knowledge by means of signs), i.e. it has to be considered as a method in which the knowledge was obtained, because the method of knowledge construction affects the validity of that knowledge.

This idea shows the similarity between content-genetic logic and genetic epistemology, which was established by Jean Piaget [18]. The goal of genetic epistemology is to link the validity of knowledge to the model of its construction. But genetic epistemology, different from content-genetic logic, also assumes to use the methods of formal logic: “Genetic epistemology attempts to explain knowledge, and in particular scientific knowledge, on the basis of its history, its sociogenesis, and especially the psychological origins of the notions and operations upon which it is based. These notions and operations are drawn in large part from common sense, so that their origins can shed light on their significance as knowledge of a somewhat higher level. But genetic epistemology also takes into account, wherever possible, formalization – in particular, logical formalizations applied to equilibrated thought structures and in certain cases to transformations from one level to another in the development of thought” [18].

Math-logicians (adepts of the UK philosophy) directly identify thought with linguistic activity and logic with the analysis of language. According to the Soviet (and now post-Soviet) tradition, language (speech) is, nevertheless, not the sole empirically observed form in which human thought manifests itself, there is also an example of behavior activity. “But, that

being so, man's actions, and so too the results of his actions, the things created by them, not only could, but must, be considered manifestations of his thought, as acts of the objectifying of his ideas, thoughts, plans, and conscious intentions" [9].

Self-development is an important ability of human thought that is not reflected by math-logicians. For instance, mathematical logic cannot describe the development of deductive science: "The development of modern science is characterized not only by an unusually rapid accumulation of new knowledge but also by the fact that the principles and methods of scientific research have essentially changed and are continuing to change" [21].

Content-genetic logic was used as a Soviet analogue of critical thinking. In 1979, in order to put content-genetic logic into social practice, Gregory Shchedrovitsky created a method of collective problem solving, called the Organizational-Activity Game. This game was similar to the Life Training for Personal Development or to the Critical Thinking Training, though it was based on Marx's dialectics and Soviet content-genetic logic. Shchedrovitsky saw it as a direct continuation of Marx's practical philosophy. Marx dreamed of a new society in which nobody would be exploited, neither by economic nor administrative means, but in which free people would work together. The Organizational-Activity Game was an attempt to create a mechanism for organizing work in groups and collective management based on common aims and values. However, in actuality, the moderator of the Organizational-Activity Games had the possibility to bring others under his control and, taking into account that according to Marx reflectivity was considered as a collective and communal property (not as an individual one), to manage the consciousness of other participants like those in the Big Brother Show. Organizational-Activity Games were very popular in the Soviet period of Gorbochev's Perestrojka.

Content-genetic logic was made as an alternative to UK philosophy. While there was another subordination between sciences in Poland (thanks to the Lvov-Warsaw School, where mathematical logic had the status of the most abstract science), we see that in Belarus and Russia content-genetic logic took its privileged place. Therefore the center of virtual ecumena of Soviet and post-Soviet scientific thinking, including Belarusian and Russian ones, is content-genetic logic, not mathematical logic or UK philosophy.

Usually, scientists do not realize the highest principles of scientific knowledge that they use. However, any scientific research is carried out, in Kant's words, in accordance with conditions of pure reason ("conditions of any possible experience"). These conditions are studied within the most abstract sciences. All over the world, those sciences with the highest evidence are

regarded as mathematical logic, foundations of mathematics, philosophical logic, computability theory, etc., but at the same time in the Soviet and post-Soviet cultures (in particular, in modern Belarus), they are considered as content-genetic logic, history of science, scientific ideology, etc.

The two main properties of *content-genetic logic* and the scientific orientation based on it are (i) the *locality and limitedness of any science* and (ii) the *historical contextuality of scientific thinking*. On the other hand, the two main properties of *mathematical logic* and the scientific orientation based on it are (i) the *interdisciplinarity of scientific research* and (ii) the *universality of scientific thinking*.

In Russia, however, many informal math-logical communities (scientific logical schools in the UK sense) were organized: Smirnov's School in Moscow, Matiyasevich's School in St. Petersburg, etc. But, in Belarus there are no such schools. The majority of logical research is carried out in the framework of content-genetic logic. This philosophical tradition had and still has many adepts in Belarus. So, the Belarussian philosopher, Prof. Yury Charin (for a long time he worked as the head of the Department of Philosophy at the Belarusian State University of Engineering and Radioelectronics), studied content-genetic logic very canonically in the framework of Marx's dialectics.

The *Belarussian Logical Circle*, establishing their own tradition of content-genetic logic, was founded by Prof. G. Levin and Prof. A. Klaučenja (see [14], [12]). It had many famous followers up until now: Prof. Uladzimir Berkau (Vladimir Berkov) [1], Prof. Anatol Chilkiewicz [3], Prof. Jadwiga Jaskiewicz (Yadwiga Yaskewich) [11], Prof. Ihar Dubinin, Prof. Viktor Czuziaszou (Tchouechov) [5], Assoc. Prof. Vital Barton [12], Dr. Mary Dziško, and many others. (See the papers by Berkau, Jaskiewicz, and Dziško in this issue.)

Now, that Circle is transformed into the *Belarussian School of Argumentation Theory*. Prof. Berkau and Prof. Jaskiewicz are its two leaders. They applied content-genetic logic to scientific argumentation. Prof. Berkau received a Ph.D. in philosophy in 1968 from the Belarusian State University. His Ph.D. thesis was titled 'Question as Form of Thinking' and his thesis for the degree of the Doctor of Philosophy was titled 'Logical-Methodological Analysis of Scientific Problems' (1981). Prof. Jaskiewicz received a Ph.D. in philosophy in 1982 from the Belarusian State University, the title of her thesis was 'Definitions and their Role in Scientific Research'. She received the degree of the Doctor of Philosophy in 1992 at the same university and her thesis was titled 'Structure and Dynamics of Argumentation in Science'.

In the Belarusian Logical Circle, formal-logical research in the restricted sense was only carried out by Prof. Anatol Chilkiewicz, who built an extension of conventional syllogistics (see [4]), where atomic propositions are of the following kinds:

1. the certain affirmative propositions
 - (a) a universal-universal proposition “every ... is every ...” (“every man is homo sapiens”);
 - (b) a universal-particular proposition “every ... is some ...” (“every man is mortal”);
 - (c) a particular-universal proposition “some ... is every ...” (“some mortal creature is homo sapiens”);
 - (d) a particular-particular proposition “some ... is some ...” (“one of the inhabitants of Athens sentenced to execution was a well-known philosopher”);
 - (e) a particular-singular proposition “some ... is an individual ...” (“one of the inhabitants of Athens sentenced to execution was Socrates”);
 - (f) a singular-particular proposition “an individual ... is some ...” (“Plato was an Old Greek philosopher”);
 - (g) a singular-singular proposition “an individual ... is an individual ...” (“Socrates was an Old Greek philosopher who lived in 469–399 and was the teacher of Plato”);
2. the certain negative propositions
 - (a) a universal “no ... is ...”;
 - (b) a particular “some ... is not ...”;
 - (c) a singular “an individual ... is not ...”;
3. the uncertain affirmative propositions
 - (a) a universal proposition with an uncertain predicate “every ... is some or every ...”;
 - (b) a particular proposition with an uncertain predicate “some ... is some or every ...”;
 - (c) an uncertain proposition with a universal predicate “some or every ... is every ...”;
 - (d) an uncertain proposition with a particular predicate “some or every ... is some ...”;
 - (e) a complete uncertain proposition “some or every ... is some or every ...”.
4. the uncertain negative propositions “some or every ... is not ...”.

Prof. Chilkiewicz also proposed probabilistic models of conventional and unconventional syllogistics. The syllogistical works by Chilkiewicz were very

interesting from the standpoint of modern logic, but were carried out outside of the axiomatic method, which was used, for example, by Prof. Jan Łukasiewicz [15]. The matter is that mathematical logic had no evaluations in the USSR as a science with the highest evidence. However, the content-genetic logic did have such a privileged status.

The best known Belarusian philosopher, Prof. Wiaczeslau Stepin, applied content-genetic logic to the philosophy of science. In collaboration with the well-known Belarusian physicist, Prof. Leo Tamilczyk (Lev Tomilchik), using this logic, they explained the origin of Maxwell's theory of electrodynamics. Now Prof. Stepin is the founder and leader of the *Belarusian School of Science Methodology*.

He graduated from the philosophical department of the Faculty of Philosophy, Belarusian State University (1956) and took post-graduate courses from the chair of philosophy of the same university (1959). Prof. Stepin works in the sphere of theory of cognition, philosophy and methodology of science and history of science [23], [24], [25]. His Ph.D. thesis was 'General Methodological Problems of Scientific Cognition and Modern Positivism' (1965), his thesis for the degree of the Doctor of Philosophy was 'The Problem of Structure and Genesis of Physical Theory' (1975). In 1987, he was elected as a corresponding member of the Academy of Sciences of the USSR, and since 1994 he has been an active member of the Russian Academy of Sciences.

Prof. Stepin has lots of open followers in Belarus and Russia (the most successful in Belarus is Prof. Lidia Kuzniacoua [25]), one of which is Assoc. Prof. Arkady Lazarewicz, the deputy director of the Institute of Philosophy at the National Academy of Science of Belarus (see his paper in this issue).

In the Belarusian philosophy of science, content-genetic logic is used as a methodological organon, therefore the tradition of logical positivism and English analytical philosophy is still ignored, but the tradition of postpositivism (its representatives are Prof. Thomas Kuhn and Prof. Paul Feyerabend) became very popular in Belarus, as well as in Russia. For example, there are many receptions of Kuhn's concept of scientific revolution. Let us remember what this is: "... the preceding discussion has indicated that scientific revolutions are here taken to be those non-cumulative developmental episodes in which an older paradigm is replaced in whole or in part by an incompatible new one" [13].

Prof. Stepin is of the opinion that Kuhn's conception is probably the best achievement of western science philosophy: "Basically it is possible to say that even in the most advanced research of the scientific foundations (they may be the works of Thomas Kuhn) the western science philosophy

is not analytical enough. It has not yet defined the main components of the scientific foundations and their correlations. The correlations between the scientific foundations and the theories and empirical knowledge based on them are not cleared. This means that the problem of the structure of the foundations, their place in the system of knowledge and their functions in its development demands further, deeper discussion” [23].

In Belarus today, there exist only two original philosophical schools: the School of Science Methodology and the School of Argumentation Theory, which both continue the Belarusian tradition of content-genetic logic.

Outside these two schools, there are lots of Belarusian philosophers who are not well organized in any scientific informal community. The majority of them are based on French philosophers: Foucault, Derrida, Lacan, Bataille, Deleuze, and also neo-Marxists, like Slavoj Žižek. This tendency may be called **Foucaultism** (from the name of Michel Foucault, the French philosopher extremely popular in Belarus). The tendency of Foucaultism is an attempt to philosophize out of context any philosophical methodology, without any tradition. The followers of Foucaultism¹ are characterized by the feelings of prophets in philosophy. In their opinion, logic is not a philosophical science. The imitation of philosophy and the absence of terminological culture caused the unorganizedness of that community.

The philosophical tradition of Foucaultism is hermetic and self-isolated too, which prevents young Belarusian philosophical groups from developing. It causes also a self-isolation of Belarusian humanities (for example, in Belarus there are no philosophers published in international scientific journals in English) and, as a result, a self-isolation of Belarusian politics.

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¹ Though the School of Science Methodology and the School of Argumentation Theory are not branches of Marxism-and-Leninism, they are associated with the old political regime by the followers of Foucaultism.

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