

Biography

Miodrag Raskovic

Author prepared this article for edition in Life and work of Serbian scientists, book 4, SASA

Among most ingenious and most educated people of the first half of the twentieth century belongs, without a doubt, a mathematician, philosopher and the first secretary of the Communist Party of Yugoslavia, Dr Sima Markovic. We will try here to describe the life and work of this important but for political reasons neglected person.

Biography

Sima Markovic was born on November 8, 1888 (October 26, 1888th in the Julian calendar) as the fourth child of parents of Milos and Anka of five children they had. Family Markovic came from the southern slopes of the Rudnik Mountain from the village Crnuce. The village has indigenous population and it is known to have existed before the time of the Battle of Kosovo. His father, Milos Markovic (1856-1910), Professor of geography, history, and the Serbian language, as well as director of Kragujevac Gymnasium, made a great impact on the son. He was one of the founders of the Radical Party and belonged among the most active representatives of its left wing. Milos was a commoner and secretary of the Parliament. After Timok rebellion he was sentenced by the Exigent Court to five years in prison, three of which he served in Pozarevac, where he turned sick from tuberculosis. He was much respected as a man and as a professor, and the place of the state advisor he refused because he did not want to be bought by the regime. But although he refused the awards, he could not refuse the fines. Because of his uncompromising struggle for a better life of the people, where he even was neglected his own family, he was often fired from the service, so that at one time he worked as an employee-wage earner. The last period of his short life, from 1900 to 1910, he spent as a professor and director of the Kragujevac gymnasium and it was a time when Sima attended the high school. They say that the political slogan of Milos Markovic was: "Serbia to be a country without poor". Sima's mother Anka (1858 – 1944), last name Sretenovic, was born in the Sumadija village Sipic.

The influence on Sima Markovic, in addition to his father, also had the Kragujevac environment. Kragujevac in the nineteenth and early twentieth century, as the old Serbian capital, represented, after Belgrade, the largest cultural and political center in Serbia. The first gymnasium was formed in Kragujevac in 1833, and also between 1838 and 1841 the Lyceum was functioning which is a precursor of both Belgrade and Kragujevac University. Thanks to Topolivnica, from which later became the Military-Technical Institute, Kragujevac became a great industrial center of Serbia and thus, naturally, the center of the labor movement. In this city in 1903 the first commoner of Social Democratic Party was elected, Dr Mihailo Ilic.

The importance and reputation of Kragujevac Gymnasium at the time was huge. It would take us too much space to list every imminent person from our past which as students or teachers has gone through this school. Thus in the same department were Radomir Putnik and Svetozar Markovic, Nikola Pasic and Sima Lozanic, Zivojin Misic and Stojan Protic.

Sima Markovic attended this glorious high school until 1907 and according to Professor Dr Ljubisa Glisic, who was one generation behind Sima, he was the best student not only in his generation but in the whole school. He was the president of Student's literary guide "Youth" through which during its long life many future writers, scientists and politicians went by. Sima's sense for nice and clear writing which he developed through "Youth" is felt in his later works and books. Students within this company were also interested in politics, so within its boundaries they were divided into supporters of then political parties. By seventh grade, Sima was inclined to radicals, and later, influenced by some of his friends he approached the social-democrats.

At the time, the custom was that delegates of the Minister of Education on final examination become university professors. Thus, in Kragujevac gymnasium in 1907 the delegate was young and already renowned professor of theoretical mathematics Mihailo Petrovic, known as Mika Alas. On that occasion, Petrovic spotted Sima's sense of mathematics and swaying him from techniques study recommended him to study mathematics. Sima accepted the proposal with enthusiasm and the same year he entered the Faculty of Philosophy in Belgrade.

Two years before the arrival of Sima Markovic to the study of mathematics, the Grand School became Belgrade University. At the time, Mihailo Petrovic and Bogdan Gavrilovic teach mathematics on Faculty of Philosophy. The two of them were for many years the pillars of the University; the first one more in scientific and the other in organizational terms. Mihailo Petrovic after published dissertation in France, returns to Belgrade in 1894 and since then represents the main carrier of our mathematical life. He develops mathematical analysis, particularly the theory of differential equations, helping his doctorates and later associates through the famous Seminar of mathematics, mechanics and theoretical physics. On the other hand, Bogdan Gavrilovic, who in 1909 passed into Technical Faculty remains remembered for his excellent textbooks from theory of determinants and analytic geometry. It is also important to note that from 1894 these two scientists created mathematical library, which was, unfortunately, only two days before the liberation, on October 18, 1944 burned by retreating German troops. At a time when Gavrilovic passed into the Technical Faculty, Milutin Milankovic was called from Vienna to Belgrade University to teach applied mathematics at the Faculty of Philosophy. He later became one of the most important scientists in general.

Despite the arrival of Milankovic, it is clear that Mihailo Petrovic was overloaded with teaching and wanted to find someone who can at least partially replace him. It was not possible to rely only on Serbs from Austria-Hungary like much claimed Gavrilovic and Milankovic, but the inner strength among the talented students had to be found. The chosen ones were Mladen Beric and Sima Markovic. Let's highlight that Sima Markovic had a wide interest, so in addition to mathematical gift, which was unfortunately only partially realized, he also had a literary and musical talent and great inclination towards social sciences and languages. Thanks to his excellent memory and musicality, he fluently spoke four foreign languages: German, English, Russian, and French. All these talents were equally developed in Kragujevac gymnasium. Later studies, which in addition to the basic disciplines, theoretical mathematics, included also applied mathematics (mainly mechanics), then Physics and Chemistry, allowed Sima to obtain a broad insight into the current state of science. That, among other things, contributed to the fact that he, for example, reside among those who quickly understood, accepted and

popularized Einstein's theory of relativity, about which his professors Milankovic and Petrovic wrote. Upon graduation in 1911, Sima Markovic was employed as a suplent in Third Belgrade Gymnasium. From that time his friendship with high school professor of mathematics and physics Slavko Milic began. Sima will later with a lot of enthusiasm show his textbooks from geometry. Slavko certainly made a huge influence on Sima to devote himself partly to pedagogy and methodology of mathematics. When in 1934 Slavko Milic died, Sima, writing from Cajnice where he was exiled, published in the Gazette of Yugoslav professor society in memoriam from which we learn not only that Slavko was a good person and an excellent teacher but also that Sima was very sensitive man and loyal friend. That affection of his is present even in some of his books.

The following quote from in memoriam to Slavko Milic illustrates the beauty of style that Sima Markovic had: "I met him in 1911, when I was, upon my graduation, appointed supplant of the Third Belgrade Gymnasium, which was headed by the late H.Liler. Liler, at the time, was proud of his board, in which there were really valid and capable school workers. But all my attention, since the first time, was attracted by Slavko Milic: I was attracted to that highland forehead that was so characteristic of an imposing intellectual figure of Slavko Milic, I was attracted to those mild but piercing eyes which were able to see so far and so deep." Finishing this article, he, writing about Slavko, seems to talk about himself: "A man of such intelligence, noble heart and versatile culture as Slavko Milic was, could not be indifferent to the injustices that today life abound; because of that his sympathies were on the side of those who suffer, because of that all of his love belonged to those who through the suffer fight for better and more beautiful social life."

At the time, Sima Markovic began to publish his first articles in the journal "Teacher", a magazine of Professor Society. He is very radical in his views on education and advocates provocatively against the evaluation of the students.

Parallel with the work in school, Sima Markovic helps Mihailo Petrovic in teaching and began to deal with scientific-research work. In addition to Petrovic's works from area of theory of ordinary differential equations, he studies the works of other great mathematicians, from, at the time, very important and prestigious French mathematical school, such as Henri Poincare and Emil Picard.

After two years of intensive work he quickly registers a doctoral thesis entitled: "General Riccati equation of the first order." It was accepted at the meeting of the Faculty of Philosophy held on June 5, 1913. The members of the Examination Board were Mihailo Petrovic and Milutin Milankovic. The thesis was defended on June 26 of the same year. The following year the thesis was published by the State printing house in Belgrade. After the thesis of Milan Beric, from 1912, Markovic's thesis is the second thesis in the field of mathematical sciences defended in Serbia. Soon afterwards, in 1914, he passed the professor exam.

During the World War One Sima Markovic managed the shelter for war orphans, with the great help of the actress Zanka Stokic. In Memorials of Kragujevac Gymnasium from 1933 and 1983 we find that in 1918 so-called Municipal Real Gymnasium was opened and that Sima Markovic teaches in it. The opening of this gymnasium was allowed by the occupying power under the condition that it teaches the Hungarian language and that the oversight is done by Austro-Hungarian officer. It is known that Sima, at the time, conducted the school choir. This is not surprising when one knows that Sima Markovic, which is not rare among mathematicians, was a great lover of music and its connoisseur.

He played the violin very well and enjoyed the performance of the German classics. He preferred Beethoven. On the importance of music and mathematics in the preface of his book the Theory of relativity (1924) he said: "There are artistic experiences which only art of the arts is able to express: music; there are scientific experiences that only science of the sciences is able to revive: mathematics. There are feelings that can only be described by tones; there are thoughts that can only be expressed in mathematical language. Mathematical language is undoubtedly the most developed most subtle, most perfect language to describe natural phenomena."

After World War One, Sima Markovic returned to Belgrade for a professor of the Second Belgrade gymnasium, and at the same time holds exercises in the Faculty of Philosophy. At the time, the custom was that the basic position of the assistant is in one of Belgrade's gymnasiums. To students, among which was our famous journalist Predrag Milojevic, he remained in the memory as a good teacher and a sleek gentleman. He performed his duties conscientiously and devotedly, besides his, at the time, already big political activity.

In the memory of Tadija Pejovic we find an interesting fact that the exercises from the theory of complex functions, which, by the way Petrovic taught, in the winter semester of 1919/1920 our famous philosopher Branislav Petronijevic held, and in summer semester Sima Markovic.

In the journal of Yugoslav academy of Arts and Sciences from 1919, he published the work entitled: "On equation $(y')^2 + y^2 = w(x)$ ". He also publishes textbooks from algebra for 1st, 2nd, 3rd and 4th grades of secondary schools.

Chronic shortages of personnel in the group for mathematics of which we already spoke felt when in the meantime Mladen Beric became associate professor. Hence it was quite natural and expected that Mihailo Petrovic together with Mladen Beric, sent a request to select an assistant professor of theoretical mathematics on the Faculty of Philosophy. The request was approved and the contest was announced, where the only applicant was Sima Markovic. Based on the positive reports which were signed by Petrovic and Beric, he was elected assistant professor for theoretical mathematics in early 1920. The question remained open whether and when the decree on his appointment was brought in, but soon after passing the Notification Sima Markovic was suspended from University.

We came to a place where we need to look back at the political activity of Sima Markovic. It can be said that the year 1920 was crucial in his life. Politics becomes dominant, so that the area of his scientific interest changes.

With the victory of October Revolution in 1917 and the end of World War One there was great turmoil in many countries of Europe, as well as in the newly-formed Kingdom of Serbs, Croats and Slovenians. The consequences of the World War One in many European countries have been disastrous. Large economic difficulties occurred. Impoverished and disappointed people sought a way out of poverty within social changes. It is quite natural that Sima Markovic, the Socialist since the high school, without paying heed to university career which was open for him, felt the need to engage in political struggle for the achievement of his ideals. He took the road that brought him a fierce battle not only for the power but within his own party as well.

On the initiative of the Serbian Social Democratic Party, in the Unity Congress which was held in 1919 in Belgrade, the Socialist Workers' Party of Yugoslavia (Communists) was formed, which immediately acceded to the Third International. At the second

Congress, in Vukovar, the party changed its name to Communist Party of Yugoslavia and the first secretaries of the Central Committee (shortly CK KPJ) became mathematicians Sima Markovic and Filip Filipovic.

On the elections for the Constitutive Parliament which was held in 1920, Communist Party wins 58 (or 59) Member of Parliament's seats of total 400 and became the third party in strength. Sima Markovic also became the Member of Parliament. On 12/12/1920 Communist Members of Parliament gathered on Slavija with red ribbons on the lapels and the inscription "Long live the Yugoslav Soviet republics" and went together to the building of the National Parliament. At the head was the president of the Club of Members of Parliament Dr Sima Markovic.

The departure from the University and the great political engagement influenced Sima Markovic to leave fundamental research in mathematics but not to give up science. From certain philosophical, but certainly the ideological needs, his interest moved towards the methodology of mathematics, foundation of physics and sciences in general, as well as political sciences. Besides, dealing with problems in physics was characteristic for many mathematicians of the time, among others, for Petrovic, Poincare and others. Physics has been in the focus of interest of the wider intellectual public after revolutionary theories appeared such as the theory of relativity and quantum mechanics. All of that had a reflection not only on philosophy but even on the ideological conflicts of the time.

In the early twenties, Sima Markovic, as well as the entire Communist Party, was attracted to the so-called national issue, both in theoretical and in practical terms. That shall be discussed in more detail later, but in simple terms the dilemma was whether to deal with the disintegration of Yugoslavia in order to win world revolution at all costs. Sima Markovic's reply was negative and mainly remained so to the end. He published his views in the book National question in the light of Marxism (written in 1922 in Vienna) and in the brochure Constitutional question and the working class (1923, Belgrade). He represents those views tenaciously in the Parliament, using his high rhetorical skills.

At the head of delegation of Communist Party, Sima Markovic went in April 1921 to the Congress of the Comintern in the Soviet Union, where he was elected the Member of the Executive Committee of the Communist International (short IK KI). He met Lenin on that occasion and make friends with him. For that meeting one anecdote is related which probably occurred and which was later retold among Serbian communists with not small pride. Namely, when Lenin in his speech, casually mentioned the theory of relativity in negative context, Markovic put the objection on that after his speech. In the pause of the Congress Lenin approached him, admitting he does not understand the theory fully and invited him for dinner to his house. They spent the evening in the Lenin's home, talking about physics, with wine and fish, baked by Lenin's wife Nadezhda Krupska.

In the meantime, while Sima Markovic was in Moscow, the Vidovdan constitution and the Law on protection of public security and order in the state (the Law on the protection of the State) were adopted which were very unfavorable for the Communist Party. The arrest and persecution of the Communists followed. In these conditions, Sima Markovic decides not to return to the country, but in Vienna in 1921 establishes Border Committee. On the First Conference of the Communist Party held in 1922, he came up to the top of the party again. Towards the end of the year he went to Yugoslavia where he was caught and sentenced to two years of imprisonment.

Sima Markovic was judicated on 12/12/1922, exactly two years after demonstrative entry of Communist Members of Parliament in the Parliament. During the trial he held a sermon in which he presented his moral and political views: "We, the Communists, do not ever come to the courts as the penitents with humble faces, which beg for the justice, because we do not believe in your justice, because we know that the justice is relative and class oriented. The courts are class institutions of the bourgeoisie and we are not asking the court to rise above the class interest, but we can ask him to raise above the regime interests. For communism, gentlemen, is not only an economic and political system. It is a unique scientific, philosophical, ethical and aesthetic system. It is a perfect harmony, the magnificent synthesis of economy, politics, science, philosophy, ethics and aesthetics, and that is my ideal. And the historical process that is filled with irreconcilable class struggle in order to achieve this ideal, that is a social revolution. And if, gentlemen judges, communism is the crime, I am a criminal. If a social revolution is a betrayal, I am a traitor. Please, judge me! No penalty will be large and no sacrifice will be hard when it comes to my ideals."

At first, he served the sentence in Pozarevac, in the same prison in which forty years ago was his father. Part of the sentence he served in Lepoglava.

It appears that conditions in prison were not too heavy, so that in 1924 he published two books: The theory of relativity both from the science and the philosophy. Especially good echo in the science, but also in the general public had the first book. Although popularly written, without mathematical formula, it is, as Joseph Goldberg said in layout synoptic, in understanding of the subject adequate, in style clear, lively and warm. In the second book, Sima Markovic is the follower of Marx, Angles and especially Lenin study in the field of theory of knowledge. The main goal is to explain the latest scientific results using dialectical materialism, especially in physics.

After releasing from prison, in which, as we already have seen, he had a relatively favorable conditions for work, which was never repeated again in later visits, great political excitements waited for Sima. The period of illegal work and hard fraction struggles within the Communist Party arrived in which he was the central figure as the leader of the so-called right fraction. Basic, but not the only conflict is about well-known and already mentioned national issue. He becomes more instrumental in the fight against it. In the period that follows the conflict includes the Comintern and Joseph Visarionovic Stalin himself. As the Stalin's dictatorship becomes stronger the position of Sima becomes weak and he was eventually expelled from the Party in 1929.

In these difficult and unequal fights he occasionally won, thanks to his great authority he enjoyed from the majority of Serbian communists. Yet, he was crabbed with the lack of heartiness during the key events at the time of Obznana resolution. It is said that he inhibited actions against Obznana with the slogan: "Do not be provoked."

When he was hard-set, particularly with the strength of power and the majority, he defended himself skillfully and looked for excuses in misunderstandings, bad translations of his texts and the like. When he had to, he even denied his attitudes, but only temporarily because he was truly convinced in them. The pressure from the regime was not any easier. Going to the illegal operation Sima Markovic had to be careful not to fall into the hands of the authorities. Therefore, he often hide, once even in the chapel on Kragujevac cemetery. He used various illegal names like Semic and Dr Vasilije Bunic (after archimandrite Vasilije, the patriarch of the Blagovestenje monastery, his father's

uncle and the great opponent of Obrenovics). They called him No. 1, and Stalin wickedly paraphrased it and called him No. 10. Finally, in Russia, he became Milan Milic.

We can not any longer restrain here in chronological description and study of all the events from the history of Communist Party and KI related to plenary sessions and congresses. Let's just mention that because of the arrest and emigration of leading members of the Communist Party and because of the existence of fractions came to frequent changes in leadership and its duplication.

While Sima was in prison, the leadership of the Party changed into "the leadership of the left" led by Trisa Kaclerovic. This leadership was not successful. There was a split, mostly because of disagreements regarding the national question. After leaving prison Sima Markovic tries to stop the split, which with the help of his delegates from IK KI he manages temporarily; but, the members of the "left" wing were not satisfied. During the 1925, the fiercest inter-party struggles were led. The situation in the Communist Party was considered on the extended plenum of the Executive Committee of KI on May 6 and November 12, 1925. The three delegates from the "left" and "right" wing were invited among which was Sima Markovic himself. The debate included Stalin, Zinoviev, Manuilski and Dimitrov. Although fiercely criticized because of his views regarding the national question, Sima Markovic was re-elected as political secretary on the Third Congress of the Communist Party held from May 17 to May 22, 1926 in Vienna. Party leadership, according to him, was unable, because it was made as a compromise created under the influence of the Comintern. The conflicts continued.

How far "left" fraction went shows the plenum of the Communist Party Central Committee held in April, 1927 without the presence of Sima Markovic. In relation to the crisis between Yugoslavia and Italy which developed because of the intrusion of Mussolini's army in Albania, Central Committee estimated that the word is not about the attack of fascist Italy on Yugoslavia but a conflict of Italian and French imperialism for supremacy in the Balkans. In this sense Communist Party Central Committee in its proclamation requests not to fire on the Italian and Balkan soldiers, but on their own capitalists, so that the attack of the Italy and its Balkan allies (referring to Bulgaria) would turn into revolution. Such a position was even approved by KI.

But regardless of the incapable leadership, the Party progressed and showed certain political success. In the frame of general workers block Sima Markovic was elected the councilor of Belgrade municipality in 1927. He also became a member of the Action Committee of the League for the rights of citizens and victims of political reaction. He objects to the decision that the part of the money intended for building of workers apartments be directed for the expansion of the infamous prison Glavnjaca, intended for political prisoners. However, the Government could not endure for long Sima's political activities and in October, 1927 puts him in the above mentioned Glavnjaca together with forty more young communists. The conditions in the investigation prison were very difficult, but only he was not beaten (which will not be the case in later arrests), probably because of his reputation and the fact that he was investigated by his former student. The investigation itself endured for a long time and in an unlawful manner, which caused the reaction of many civic newspapers dissatisfied with the regime. Sima Markovic defended himself successfully on court, criticizing, apart from regime, the cowardly attitude of some younger comrades, which was later used against him by opponents. At the beginning of the following 1928, he was released from prison. But, while he stayed there,

in Zagreb was held Eight local conference, which condemned the action of the fractions (allegedly on the initiative of J.B.Tito) and requested the intervention of the Comintern. It was like knocking on the open door.

In the late twenties, after a conflict with Trotsky, Buharin and Zinoviev, Stalin's position strengthens a lot. Stalin no longer wanted to tolerate different opinions. Therefore, due to the crisis in the Communist Party he convened the conference in Moscow in 1928. Sima Markovic start for this conference immediately after release from prison, but he was arrested together with ten comrades in Graz. All of them were returned. It is supposed that the provocateur Matija Brezovic betrayed them, who was later tried in Moscow, where he was shot in 1931.

Once again happened that Sima had a bad experience on the conference on which he does not participate, although the question is whether his presence at the time would be of any help. The conference was held without the representatives of major organizations and ended with the publication of the famous "Open letter of the Comintern to the Communist Party members". On that occasion, CK was dismissed and the task was set to Djura Djakovic to implement Open letter into action and to make preparations for the Forth Congress of the Communist Party. However, a large number of Communists in Serbia, especially those in Belgrade, did not want to accept this letter. A split in the Party occurred. On the Forth congress, held in Dresden area on November, 1928, with the participation of only 22 delegates, Sima Markovic was forced to withdraw his political attitudes and write a letter where he acknowledges his mistakes and makes a promise to fulfill all decisions of the Congress under the leadership of newly elected Central Committee. Palmiro Togliatti, who was a representative of the Comintern on the Congress, allegedly took his side with the words: "Comrade No. 1 is not an ordinary member of the party. He is the leader. He still may be worth. He might be of use for the party very much. And that's why we should try and save him for the last time."

Of the other decisions the most important is the one that requires the breakup of Yugoslavia into independent national states. In liberal terms, it was a victory of Croatian nationalism in alliance with Stalin. In the head of the Party comes so-called "workers management", which proved to be extremely incapable. After sixth-January dictatorship, CK has been moved to Zagreb. Careless call to rebellion provokes regime reprisals, the leadership partly moved to Moscow and a large number of organizations were broken. Sima Markovic was also invited to leave the country, but he refused. He did not want to go to Russia.

In conditions when Communist Party of Yugoslavia was weakening Sima Markovic forgets his contrite promises given under great pressure and continues to fight for his old attitudes. He also refuses to implement the directive on armed uprising and the creation of illegal union which, by the way, has had disastrous consequences for the Communist Party itself. Therefore, on the Sixth plenum of the Central Committee in October 1929 he was expelled from the Party; decision on the exclusion is contained in the "Resolution on the fight against the right threat in the Communist Party" which was adopted at the plenum. He learned about this decision only when he was arrested by the police in the middle of the 1930. It shows how weak influence of the leadership of the Party is at the time, which is located in Zagreb or in Moscow but always under the direct supervision of the Comintern. However, although expelled from the party, he did not renounce the communism, though, as he said, leadership of the party sees him as a "dead dog". He

continued with the illegal work, which was unofficial in relation to the Communist Party. Many local party organizations, such as Sabac's, for example, maintain a connection with him and not with the Central Committee. During the 1932 he published in Belgrade "Communist Bulletin" where he deliberately avoids dealing with national issue.

It is interesting to see what impression Sima Markovic left, in the early thirties, on young communists Srdjan Prica and Milovan Djilas.

Picturesque is the description of Srdjan Prica, who in 1931, after arrival in Belgrade, established a connection with him: "He accepted me as an old friend, although we have never seen before. He was short, much more than I expected, and quite strong and plump, bold head, which reminded me of Lenin's head..." Prica also, tells us about the ambient in which Sima lived and worked: "I wondered, how after two years of the declaration of dictatorship, in the midst of Belgrade, one Sima Markovic sits surrounded by Marxist books and Lenin's photographs. I asked him about that. He laughed and said that no one can take that away from him."

Milovan Djilas also remembers Sima from that time: "Sima Markovic belonged among people with the most extensive knowledge that I have ever seen. He was of a lively spirit and reflexes, always ready to move from topic to topic, moving easily in all areas even in those which were not his 'expertise'. At the time, for example, the psychoanalysis was in vogue, even with the communist intellectuals and it was clear that he was familiar with it from the "first hand" better than the surrealist Djordje Jovanovic."

Sima Markovic has always been a lover of nature and hiking, especially those thirties. Very often on Saturdays he went on foot to Avala and that was great refreshment for him: "When a man climbs on the mountain and watches from there the endless view, many things in his head become clear and revitalized. They are no longer as thick, hard and exclusive as they are in the room among the books."

Since his exclusion, Sima Markovic has been trying to connect with Central Committee and lodge an appeal to Comintern on the decision on exclusion. Comintern does not want any relations with him and performs against him in the press like against "renegade, counter-revolutionarist, bourgeois' servant, etc." That was very difficult time for Sima, who was subjected to a police escort, arrests and severe torture and whipping among the walls of Belgrade's "Glavnjaca" in the winter of 1932/33. In the middle of 1933 while he was in visit to his brother Miodrag, he was arrested in Vrnjacka Banja, and then convicted in Belgrade and banished to the "eternal exile in Sandzak." The following two years he spent in Pljevlja, Cajnice and Sarajevo in a very difficult material position, and without the possibility of decent earnings. In exile he works illegal, forms party organizations, writes pamphlets and articles. In that period he was arrested twice and at the same time the people were, under threat of imprisonment, forbidden to meet with him. He was constantly followed and tortured. Sima Markovic stated that in Cajnice assistant of the chief of the police was belogardejac Sergey Kotlarev who all the hatred towards bolshevism poured on him.

In one picture from the vicinity of Pljevlja from 1933 or 1934 we see him in a typical alpine position surrounded by three young Pljevljaks. One of them was Miso Pavicevic, later our distinguished diplomat. We assume that while he was on those trips at the same time held party meetings where he spread his communist ideas.

In the mid 1933 Sima Markovic establishes the connection and in 07/07/1933 on the meeting of party leadership the previous decision to leave the country was confirmed. On

following 1934 he again raises the question of his return to the Communist Party; however the Central Committee has decided to discuss about that question after his departure to exile. He was not, obviously, trusted. Finding himself in a very difficult position of an exile, Sima Markovic decided to emigrate. With the help of „Belgrade friends“ and Central Committee which sent him a passport, in April 1935 he fled from exile to Vienna and then in Moscow.

While Sima Markovic was in Vienna, the Central Committee of the Communist Party demanded from him to make a statement in which he will admit his mistakes, on basis of which the decision about his further state could be decided. Proud Sima wrote three statements in the first half of 1935 which contain „self-criticism“ of his earlier views on the national question, but none of them pleased the leadership of the Communist Party. Only at the Seventh congress of the Comintern, in September 1935, was he admitted again in the party by order of Georgi Dimitrov. It is assumed that it was after the fourth statement, which is not in our archives.

The period from exclusion from the party until the departure to Moscow was very plentiful for the scientific work of Sima Markovic. In this period he published several books: Einstein's theory of relativity (1929), Communism in Yugoslavia (in German), The village issue and the agrarian crisis (1932), Basic concepts of political economy (1933), Critical reviews I and II (1934, under Dr Vasilije Bunic pseudonym), The principle of causality and modern physics (1935) and The contributions to the dialectic-materialistic critique of Kant's philosophy (1936).

He employed in Moscow in 01/11/1935 as a research associate of Philosophy Institute of the Academy of Sciences of the USSR. During the 1936 he prepared for publishing the scientific work: „Dialectical materialism and modern physics“, but we do not know whether it was published.

We shall now devote little attention to his family life. Sima Markovic married Branislava, Branka Markovic in 1927, who was born in 1898 in Kragujevac. This was Branka's second marriage. They had no children. Sima addressed her as „You“, which, according to Djilas words, confused the young communists and they considered that as provincial manner. According to Sima, Branka was of bourgeois origin, but after the World War One she opted for communist movement and became the member of the Communist Party of Yugoslavia in 1923.

In the contributions for the biography of Dr Sima Markovic, Slavoljub Cvetkovic writes about Branka: „Sharing the fate with Sima Markovic since 1927, she accepted his political views and ratings. Upon arrival in the USSR she was very noticeable in the circles of the Yugoslav Communist emigration, so on the session of the Yugoslav delegation on the Seventh Congress of the Comintern it was decided (September 28, 1935) that she be recommended for Communist University of National Minorities of the West. However, by the decision of the Polit-Bureau of the Central Committee of the Communist Party of Yugoslavia from October 15, 1935 it was resolved that Branislava Markovic be „sent to the Russian operation in order to anneal“.

After the liberation of Yugoslavia she came back to the country and remained active in political work. She chosen the politic of the Cominform in 1948, and remained faithful to it until the end of her life. She did not want to talk about Sima's arrest and death. It was said that she died tragically on the grave of her mother.

Sima has maintained a very close and cordial relations with his family, regardless of different political beliefs. He usually visited them for Christmas, family-name saints day or some other saints day, bringing the presents for children, which he loved very much. On that occasion, he used to play with the children and stayed in their best memories, as a gentle and good man. Depleted by frequent arrests and persecutions, relatives occasionally helped him by buying him clothes, for example. And he gave those things to more impoverished.

Data in connection with his arrest and death are very vague and contradictory. Many who have written about him link his end for the 1937, probably because that year was characteristic for famous Stalin's „purge“. However, there is a postcard which he in 1938 sent from the holiday in Sochi to his relatives. So, a year which was taken later as the year of his arrest was either 1938 or 1939. Then, apparently, by some, he was sentenced to 10 years in prison. It was not known whether he was shot or died in prison. There is an opinion that he died from the inflammation of the kidneys in a Siberian concentration camp during the 1942.

Interesting is, though little possible, the opinion of the Soviet intelligence agent Pavle Poponic Crni, published in 05/03/1993 in the daily newspaper „Politics“. There is said that Zdravko Pudaric sent a letter to Crni with the following content: „I got a secure data from a Soviet intelligence agent, Ukrainian Dj.M., that our communist leader, Dr Sima Markovic was not liquidated in the Siberian Gulag. He confirmed to me that Dr Sima Markovic was released from Gulag in 1949 and that after that he lived in Moscow as a pensioner by the end of his life in 1952. He tells me that this Sima was the subject of discussion regarding the resolution of the Inform-bureau, and that he was on the Soviet side, that the main culprit for the fate of Sima Markovic for written reports, was Josip Broz (Walter), so that Walter could strengthen his position. I have trust in you Pavle. You shall tear the letter, but do not forget the text. The time may come when it will be useful. I directed another person into this, no matter what happens.“ The intention to, howsoever, rehabilitate Stalin and besmirch Tito was obvious. Nine years earlier in the same daily newspaper, writing his feuilleton, Moma Markovic said that Sima Markovic was rehabilitated on 10/06/1958, which, although it sounds strange, does not have to directly contradict less probable testimony of Crni.

Most detailed and most specific in the description of the controversial death of Sima Markovic certainly was Pero Simic, who in feuilton entitled: „Tito's secrets and the underworld of Kremlin“, published in daily newspaper „Novosti“ in the October 1991, writes: „Thus, in Moscow in April 1939, in the muck way, shot from behind, in the back of the head, was killed and burned in crematoria of Don's cemetery of Moscow's October region the following night Dr Sima Markovic, most educated communist of interwar Yugoslavia...“ and continues: “Dr Sima Markovic was shot and burned exactly one month after the decision on his exclusion from the Communist Party, which was on Broz's most energetic request, on one informal meeting in Bohinj, delivered by Edvard Kardelj, Milovan Djilas, Ivo Lola Ribar, France Leskosek and Josip Kras“.

Referring to the lists of shot people published in Moscow in 1993, Milenko Djordjevic, author of political essay „The birth of Titoism“, in the weekly newspaper NIN from 04.04.1997, states the same date of death. A statement that, in these feuillets, the word is about the exact date we got from Ubavka Vujosevic from the Institute for contemporary history. According to the data she received from the Russian archives, Sima Markovic was arrested on July 20, 1938 on charges that he belonged to „Right Trotsky terrorist organization“ and that he collaborated with the English intelligence service. He was sentenced to death and shot the same day, April 19, 1939 and then buried in the Don's cemetery.

In the city cemetery in Kragujevac on the monument to his father Milos, sister Vidosava and brother-in-law Jovan Jovanovic Kajafa engraved „Dr Sima Markovic (1888 – 1938), liquidated in Russia“. Journalist of Kragujevac's „Light“ (which was shut down in 1997) Ljubisa Obradovic said that it was Kajafa's response to the stones that young activists, immediately after the war, threw on his windows exclaiming: reaction, reaction.

Chased by the regime, defeated in his party, tired by the Stalin, he was, in the end, deliberately forgotten in the political life of after-war Yugoslavia. Only for a brief moment did the participants of the First meeting of self-controllers in Kragujevac remember him, laying a bouquet of red carnation on his symbolic grave. And never again.

For the last ten years the conditions were created to write objectively and thoroughly about Sima Markovic, but little has been done on that plan. Unfortunately, none of the streets in his native Kragujevac bears his name. He certainly deserved this – as a man who, as a second person in Serbia, had PhD from mathematics, he was one of our greatest intellectuals between two world wars and represented central figure of the communist movement in Serbia.

We believe that particularly important are his research from the field of theory of knowledge and the base of science. He is consistent in the defence of Marxism, in the field of which he attempts to answer to the open questions which arose in scientific revolutions, especially in physics.

His work is still to be analysed and evaluated. Unfortunately, it seems that Sima Markovic once again has bad luck. The interest for Marxist philosophy which until recently might have been too high, now, after the collapse of the Soviet Union, drastically reduced. Unfortunate as he is, it could happen that he who, for political and ideological reasons has been accused of being positivist, now be ignored and underestimated just because he was Marxist.

Popularization and the basis of physics

Within the broad intellectual interests and activities of Sima Markovic special place belongs to physics, especially two of its most important theories that have arisen at the

time: the theory of relativity or, as Sima used to call it, relativity theory, and quantum mechanics. By the way, the interest for these two theories at the time was great both in world and in our country. Let's recall that about theory of relativity in the twenties wrote such scientific authorities as Mihailo Petrovic and Milutin Milankovic. That is quite understandable when one bears in mind the fact that the crisis of physics raised several questions which have hitherto concerned only philosophy, such as, for example, space, time, causality and the like. Sima Markovic found himself invited to, continuing Lenin's line, in the field of dialectic-materialistic method, try to provide answers to the new-born problems. Publishing library of Geca Kon from Belgrade published in 1924 his book entitled: Theory of relativity, a popular-scientific sketches. The book has 80 pages and it is divided into two parts.

The first part refers to the special and the other on the general theory of relativity. The first, and very commendable, criticism this book got from Josip Goldberg (see J.G.). So Goldberg says: „Mr Markovic solved his task very elegantly, to present the theory of relativity without great mathematical device, a yet not to vulgarise it. As a way of showing he chose a happy combination of the three methods – historical, logical, physical – with which it can be accessed to theory of relativity in the popular part. In schedule the book is synoptic, in understanding of cases adequate, in style clear, lively and warm. It is possible that the sceptic might think that the book, at times, was written with more enthusiasm and temperament, than needed for exact-scientific subject. But just in this harsh and difficult matter, where to the mind can only be spoken in mathematical terms, the author will initially create contact with layman reader and close him to an unusual subject, if it effects his imagination. I especially think, that the book succeeded in plastic with which it shows and interprets the significance of the results of the theory of relativity. Without making concessions in terms of exactness of science by doing so, the writer with experienced and compelling manner of showing avoids dangers, so that the laymen may not find these results absurd, and in this direction the work might serve as a model.“

In his thesis about this book (see V.B.) Vukota Babovic highlights its outstanding educational values: „The text deserves the highest pedagogical evaluation. The author has extraordinary talent for exposure of heavy material understandably and inspiringly. Great methodological exposure.“ When talking about language, Babovic says: „Markovic's Serbian natural language is excellent. A great stylist. An ease of expression. It is pity that this book was not available in post-war years, so that these seeds of fine expression could fertilize. Today, the great physicists that so brilliantly write in their mother language are rare, as Sima was.“

By Goldberg's opinion, the lack of the book is that „the relation between special and general theory of relativity does not emerge to light“. Babovic, however, says: „Only at the end of the book do we see a slight decrease when the author writes about the consequences of the General theory of relativity; he fails to mention Friedmann's results, fresh news, and, in accordance with it, offer the reader the variants of the universe evolution“. Past his dialectical beliefs, Markovic paints the universe quite static, apparently only in accordance with Einstein's ideas, for which we know to be overcome today in that segment“. Of course, Babovic knows that these shortcomings can not be too

severely attributed to Sima in regard to the time when the work appeared, but, at the same time, emphasizes his good instinct to, fifteen years before the discovery of fission, highlights the faith in the possibility of using energy in accordance with the relation $E = mc^2$.

That Sima Markovic understood the essence of the theory of relativity, Milan Dimitrijevic (see M.D.) also emphasizes for whom Sima Markovic is its great connoisseur and popularizer. He especially emphasizes the following quote from the book in which the essence of the theory of relativity was given: „The theory of relativity did not spring from the speculative submergence in the basics of the physical knowledge, but it developed under the influence of the experiments which the old theory could not explain; the experiments are the ones that broke the narrow framework of the old theory, opening new roads and new perspectives for expansion and diving of the scientific knowledge“.

The philosophy of sciences and theory of knowledge

From science and philosophy

Sitting in Lepoglava, where as a political convict suffers first shocks of the regime, Sima Markovic writes a book titled: „From science and philosophy“, which consists of six interconnected articles: Science and philosophy; The value of objective knowledge; Boundaries of knowledge; Theory and practice' On laws, principles and hypothesis; The problem of substance; Philosophical importance of the Theory of relativity. In this book he aims to give the basics of the Marxist theory of knowledge.

The book has 145 pages and it was published by the Geca Kon's Publishing library in 1925.

In writing this work, Sima Markovic seems to defy the regime with his enthusiasm for philosophy of dialectical materialism. He directly introduces his goal: „I particularly tried to show, luxuriantly specifying the view of most qualified representatives of modern science that dialectical materialism is at the same time the philosophy of modern science“.

While Dusan Nedeljkovic (see A.S.), not without political reasons, considers Sima's philosophical views as positivist, mechanistic and in whole anti-Marxist, Andrija Stojkovic has a different opinion. He believes that this rating is, generally, true only in terms of Sima's definition of philosophy and dialectical materialism, but then he adds: „We can say that Sima Markovic gave in his time the most complete and most accurate outline of the basic principles of dialectic-materialistic gnoseology“.

In the first article he discusses the relationship between science and philosophy. On the question: „What is science?“, Sima Markovic replied: „Science aims to give the more

faithful and complete picture of the world“. By the world he means: „all that is directly or indirectly accessible to our perception, to our knowledge“. Hence his attitude towards philosophy. He is a great critic of metaphysics for which he says that it deals with pointless questions such as: the last cause, the purpose of the universe and the like. Rejecting speculative (metaphysical) philosophy as ultimately „a sophisticated form of religion“, Sima expresses great optimism about the possibilities of science, but not in its omnipotence.

If a philosophy is identified with the theory of knowledge which deals with the process of knowledge, mechanism of knowledge and then with objective values and boundaries of the knowledge, then, says Sima, philosophy completely merges into science. Hence, he uses the term „philosophy“ only for practical reasons, only in terms of synthesis of scientific knowledge. According to him, the general theory of knowledge could dissolve in psychology, logic and dialectic.

In another article Sima Markovic discusses the basic philosophical problems, as he sees them, and with rich argument, supported by the opinions of leading scientists and philosophers, summarizes:

„1. The external world exists objectively, ie. beyond our knowledge and independently from our knowledge;

2. The substance is primary, the spirit secondary; the substance before humans, the spirit is just one of the top products in the development of substance, property of especially organized substance;

3. Knowledge has an objective value, ie. an objective reality is reflected in knowledge, so knowledge is just mental picture of objective reality;

4. Knowledge is function – in the mathematical sense – of the historical development; it is in its case and in its natural tendencies infinite, but encounters practical limits, ultimately, in the general state of the technique of the given historical epoch. Knowledge is an endless process that matches the endless progressive development of mankind. Absolute knowledge is the ideal to which science aspires asymptotically, ie. the ideal to which it gets closer but which can never attain“.

The third article features an abundance of arguments in favor of the Marxist understanding of the relationship of theory and practice. That relationship is for Marxism only one special form of the more general problem of the thinking relationship towards being, subject to the object, spirit towards substance. For Sima Markovic, which he shows on a large number of examples, the theory and practice can not be considered as „the two separate worlds, like two opposites, but as two sides of a same process, as two moments of a higher dialectical unity“.

In the fourth article the relationship between laws, principles and hypothesis is discussed.

Here we will give just one illustration of how Sima understands the concept of principles. Starting from Engel's view that: „The principles are not a starting point, but the end result of testing; they are not applied to nature and human history, but abstracted from them...“, he concludes that: „The principles of mechanics, as they were formulated by Newton, are not conventions, nor logical postulates but the results of years of experience.“ Then he said: „The cornerstone of classical mechanics is known Galilei's principle of inertia, which Newton formulated as the first law (Lex prima) in his capital work Mathematical Principles of Natural Philosophy... The principle of inertia is not evident in a priori sense, but it is based on experience: because in no case can statement be called self-evident: that a body, for example, which is not affected by any power, can still constantly move. This statement is even against the so-called 'common sense'. Yet, born from experience, the principle of inertia was given its full justification in experience, so that in its accuracy can not be suspected. Beyond any discussion is the fact that the principle of inertia came from abstraction of experience.“

In the fifth article, the essential knowledge of natural sciences and mathematics, which in the first four articles was generously announced, comes to full expression. For Sima Markovic, the problem of substance is „the problem that lies at the basis of all scientific problems.“ He clearly defines his goal: „Without engaging in metaphysical speculation about „being“ of substance, we will this time be limited to only presenting the latest results to which science came penetrating deeper in the intimate structure of substance.“ We can say that in his goal Sima succeeded perfectly. Even that part of the critics, who had not too much understanding for dialectical materialism, praised the fifth article.

The critique of Kant's philosophy

The surprising results in physics, particularly in relation to quantum mechanics and theory of relativity, actualized in the thirties Kant's thought and led to attempts to interpret these results in the frame of neo-Kant idealistic philosophemes. That, as well as the translation of N. Popovic from 1932 of „The critique of common sense“, and especially the study „Kant“ of M.T.Seleskovic, motivated Sima Markovic to, in Belgrade, Pljevlja and Cajnice in 1933 and 1934, writes a book entitled: Contributions to the dialectic-materialistic critique of Kant's philosophy. The book was printed in the Publishing house „Skerlic“ in 1936, has 130 pages and consists of two parts.

The first part, entitled: „A view of the Kantian theory of knowledge“, which makes three-quarters of the book, represents a materialistic critique of Kant's theory of knowledge. Noting that from the idealistic point of view, the best critique was given by Hegel and that from materialistic point, only fragmented and largely polemic, gave Marx, Engels, Phelanov and others, Sima says: „Our intention is not, as seen from the very title, to give a systematic critique of Kant's philosophy. We focused on one part of it, on its basis, so, specifying the results of previous criticism, expanded it on certain issues, which were previously neglected, and so gave a series of new moments that will undoubtedly enrich materialistic critique of Kant's philosophy.“

At the beginning, giving recognition to Kant as one of the greatest minds of mankind, he says: „But Kant should be assessed dialectically, which means: in relation to historical ie. specific political, economic and spiritual circumstances of the time when Kant lived and worked. And so observed, Kant remains the star of the first size of the philosophical sky. However, all those who try to represent Kantian philosophy today as the culmination of the human philosophical thought, are clearly wrong.“

We can not indulge here in showing all aspects of critical questioning that Sima performs in relation to the Kantian theory of knowledge, starting from his „things in themselves“ onwards. We shall only stay on the relationship between mathematics and philosophy, especially in relation to the synthetic judgements a priori.

Sima Markovic observed very well that one of the Kant's fundamental errors is that he thinks that empirical origin and necessity of knowledge absolutely exclude each other. So he simply and beautifully notices: „Premise $2 + 2 = 4$ undoubtedly comes from experience, and yet its necessity is proverbial (as clear as $2 + 2 = 4$)“. Polemizing with the Kant's thesis that „none of the basic attitudes of pure geometry is analytical“, he nicely notes that: „Kant assumes truncate concepts, and then add a predicate, which is in fact inherent to the subject, declares for the synthesis, from which synthetic judgement results and a priori.“

He devotes particular attention to the question of relation of Kant's a priori understanding of geometry to non-Euclidian geometries and the theory of relativity. With the right he says: „Einstein showed that Euclidian geometry does not correspond to objective reality. Exact description of physical phenomena can be performed only by Riemann's geometry. The theory of relativity means the negation of Euclidean geometry, not destructive but creative dialectical negation. The theory of relativity at the same time 'abolished' and 'preserved' Euclidean geometry: it 'abolished' its pretense of absolute importance and 'preserved' it as a moment, one special case of more general Riemann's geometry. The theory of relativity set Euclidean geometry in the right place: it is still valid under special circumstances and with such great approximity which is practically certainty. But Kant's theory of Euclidean geometry as synthetic knowledge a priori is buried forever.“

It is interesting that Sima in this book announces separate work on the theory of mathematical knowledge. Unfortunately, as it is known, he failed to realize that because before the publication of this book he emigrated to USSR, where he was soon arrested and killed. It remains as open, interesting question of how familiar he was with the development of mathematical logic, which in works of Gödel and others at the time was in full swing, and without which he could not penetrate in the spirit of modern mathematics. However, what we just said does not in the least diminish his correct criticism of Kant's philosophy.

Great philosopher and naturalist, Kant was weak mathematics expert, which was fatal for his philosophical system as a whole. Here's how Sima Markovic sees the Kantian philosophy in general: „We have already said before that the Kantian claim that there are a priori knowledges was basic and fatal error of Kant. Kant fell into this misconception,

primarily as a victim of his great love of mathematics, of which he always spoke only in superlatives ('Queen of science', 'pride of the human race'). A great love is always blind they say. In this Kantian case it showed as true, because mathematics was the main Kant's temptress. Kant blindly believed that mathematical axioms are synthetic a priori judgements, that geometry is synthetic knowledge a priori. Not suspecting the existence of knowledge a priori, Kant set himself as the main task to interpret, explain, 'prove' the possibility of knowledge a priori: and that is exactly the core of his transcendental philosophy. If there is a priori knowledge, then Kant's theories of space and time, categories and transcendental schematism are imposed with logical necessity, because all these theories are constructed in that way and for the reason to explain the possibility of a priori knowledge." According to Sima Markovic, Kant dealt with futile job: „to prove the possibility of what does not exist“ ie. that the synthetic views a priori are possible.

Note that from the standpoint of modern theory of knowledge a strict division between analytic and synthetic judgement has been overcome. Thus, according to Stefan Berker (see S.B.) the judgements are both analytic and synthetic. They come from experience, but once given they define, and so they are analytic and a priori. This is best seen in the above mentioned example $2 + 2 = 4$. It is reliable that we come to this fact with counting and addition (in terms of shrinkage) of a homogeneous subjects, such as sticks. However, we can build „formal“ arithmetic (which was, as we know, done by Leibnitz for the first time), where according to some in advance, „a priori“, given rules, we prove that $2 + 2 = 4$. Further development of formal arithmetic leads us to so-called non-standard models and enrichment of our knowledge about the possible forms of infinity, which goes beyond our immediate experience possible. However, it is significant and crucial to note that possible non-contradictory „arithmetic“ in which a strange law would be enforced $a + b = 0$, even though it is „synthetic a priori“, is not of interest because there is no „model“ that so much has to do with some of our non-trivial experience. Of course, in the modern phase of development of mathematical theories of inspiration for the introduction of new definitions and axioms it is usually drawn from the original, less abstract, mathematical theories and not from the immediate and non-mathematical practice, which is often able to mislead some contemporary philosophers to forget about the empirical origin of mathematics. In any case, Kant's division of the judgements on a priori and a posteriori as well as on the analytic and synthetic ones, although he sees the judgements as static and leads to a dubious notion of synthetic judgement a priori, was of a great importance for the development of the theory of knowledge.

In the second part, entitled: On a revision of Kant's theory of knowledge, the study of Momcilo T. Seleskovic titled „Kant“ has been criticized. This review, Sima Markovic subjects to a harsh criticism even from the formal-logical point of view. It is also part of the controversy between them (see M.S.).

The principle of causality and modern physics

Continuing his research in the theory of knowledge and basic science, particularly physics, Sima Markovic in 1933 completed a book entitled *The principle of causality and modern physics*. It was published by Publishing and library company of Geca Kon. The

book has 205 pages and is divided into eight chapters. In it, starting from the latest results in quantum mechanics and theory of relativity, but in psychoanalysis and social sciences, is discussed about the problem of causality, determinism, circumstances, freedom of will and the like. Sima Markovic analyses the works of many famous philosophers and scientists who discuss these issues, either wanting by polemizing to knock down their idealistic or vulgar – materialist views, either in order to find examples and views that will substantiate his dialectic-materialistic standpoint.

We will, as an illustration only, cite a few of Sima's thoughts related to the notion of coincidence, Heisenberg's relation of uncertainty, as on the relationship between mathematics and physics.

Sima Markovic is quite close to Spinoza when he says: „The case is often, in ordinary life, defined as the intersection of two different causal chains: when someone goes down the street and the roof tile from a house breaks his head, that is the case, and it may be very unhappy case, but that does not mean that the person concerned 'accidentally' went down the street, or that the tile fell 'accidentally', because both had their specific causes, which belonged to different sequences. Here, in fact, we have only one unexpected coincidence and nothing more. For the case in terms of no-causality as well as for free will in the terms of indeterminism there is no place in science“.

Central place and starting point for the aim of denying causality, for most philosophers and scientists of the time and later, is the Heisenberg's relation of uncertainty that says that we can not simultaneously and exactly determine the position and momentum of electrons. It has resulted in the impossibility of safe prediction of events, which is the proof for many that the law of causality does not apply.

Concluding that this attitude is a direct consequence of the positivist philosophy Sima Markovic says: „Heisenberg's relation is not an expression of natural law, the law which exists objectively, in nature: Heisenberg's relation has the character of an empirical finding: it formulates the relations between certain quantities as they, when the experiment is manifested, without going into their essence. Heisenberg's relation is, therefore, the conclusion of the inability to on today's level of experimental technique, simultaneously equal measure two conjugated sizes, for example the position and velocity of a corpuscula. Understanding of Heisenberg's relation as the natural law is projecting of our own inability into nature, masking of subjective limitation with objective impossibility. But even if we were not convinced that Heisenberg's relation is caused by immediate state of measurement technique, it is not 'natural law' in a scientific sense, because it is not reflected in objective-real relationships but only states the impossibility of exact simultaneous measurement of certain conjugated sizes due to the mutual activity between observer (means of measurement) and the observed object. For positivists, however, there is no at all objective reality that would be independent from us and our knowledge: and that is why they were unable to see the above difference“.

At the time when this book went out of print, and Sima was definitely leaving the country, Einstein, Podolsky and Rosen gave a thought experiment that has the

consequence in reality, if the reasoning in quantum mechanics is performed consistently, that there is no electronic spin before its measured. We do not know whether in Moscow Sima Markovic was familiar with this result but we believe that he would like it, as it confirms his thesis on „incompleteness“ and „inadequacy“ of quantum mechanics for the expression of natural laws. Of course, in the basic principle of dialectical materialism that things exist outside ourselves, he could not doubt.

We would like to say a few words about the place of quantum mechanics in modern science. The fact is that it still more and more relies on non-trivial mathematical formalisms such as spectral theory of operators in Hilbert spaces and quantum logic and that the obtained results still coincide with more refined experiments. However, it was, due to the lack of basic concepts, strange effects and too philosophically formulated conclusions and further, regardless of the constant development, the subject of many controversial discussions. Yet it seems that majority of today's physicists is satisfied with the results achieved by quantum mechanics and especially with its agreement with experimental results, so that the question of its basis, in philosophical sense, is often rather neglected. This is, after all, quite in accordance with the rationalistic thought and pragmatic orientation of modern Western civilization. In the preface of the Heisenberg's book *Physics and Metaphysics* (see V.H.) Zvonko Maric in this sense says: „In the sphere of physics new scheme is generally accepted in all areas. There is no impression, however, that accepting the Copenhagen interpretation stems from the assurance rethought deeply. I suppose, that this acceptance comes in a great part from the pragmatic spirit that dominates the cultural climate of our time“.

Beside Sima Markovic, there were others who attributed to the current theory of quantum mechanic only temporary importance. One of them was perhaps the most important physicist of the twentieth century and one of the creators of quantum mechanics – Albert Einstein. Einstein, until the end of his life, did not like the statistical nature of quantum mechanics. Until the end of his life he tried to put quantum mechanic on a new basis; we know he never managed that.

When talks about mathematics and its relation to physics, Sima Markovic says: „At this point we have to keep ourselves little on the role of mathematics in physics. One of the main lines of development of modern physics is its mathematization. This tendency of mathematization gave rise to a variety of metaphysical speculations about being of both certain physical phenomena and the entire universe. The root of all speculation is in the wrong understanding of the very essence and meaning of mathematical symbolism, and from that comes the inevitable misunderstanding and misconception of the very role of mathematics in physics. First of all, the role of mathematics in physics, just like in other sciences, consists mainly in that it tends to express as accurately and as completely the empirically determined both quantitative-numerical and qualitative relationships between observed phenomena. Mathematics summarize, precise and generalizes the experience that physics gains. Newton's law of gravity is a great example of this function of mathematics from an earlier period of history of physics.

But this function does not exhaust the role of mathematics in physics. Mathematics is not a maid of physics: between physics and mathematics there is no relationship of subordination but coordination, just the relation of dialectical relationship in the form of mutual help during the single development.“ Then Sima Markovic cites a series of experiments for the last statement.

Pointing out, but not overestimating the importance of mathematics, Sima says: „Mathematical image of the world is only one specific, abstract form of general mental picture of the world.“

The work in the field of mathematical sciences

Doctoral dissertation

Sima Markovic's doctoral dissertation entitled The general Riccati's first-order equation for the most part belong to the field of qualitative analysis of ordinary differential equations or, as it is sometimes called, the analytic theory of differential equations. Written under the leadership of then already a full professor Mihailo Petrovic, indisputable expert in that area, while the member of „review board“ beside Petrovic was Milutin Milankovic, then associate professor. It was defended in 1913 and published in 1914.

The thesis has a total of 88 pages and, in addition to the introduction, contains four chapters: Transformations, Qualitative integration, Approximate integration and Mechanical integration.

In the introduction gives more historical notes and results related to Riccati's equation and its application in geometry, mechanics, physics and chemistry. The first chapter is of technical nature and it is shown that Riccati's equation in expanded form $y'+a(x)y^2 + b(x)y + c(x) = 0$ can be reduced to the general form of Riccati's equation $u'+u^2 = d(x)$.

The fundamental transformation is also given $u = y'/y (= \exp(udx))$ with which Riccati's equation in general form and differential equation are reduced to one another in the form $y'' = d(x)y$, which is of fundamental importance for later work.

The second chapter is the largest part of the thesis and it contains the most important original contribution by the author. Using the above transformation, Sima Markovic proves with the analogy of Sturm's theorem that when three Riccati's equation are given: $v'+v^2 = a(x)$, $u'+u^2 = b(x)$ and $w'+w^2 = c(x)$ where $a(x)$, $b(x)$ and $c(x)$ are holomorphic functions in space I and at the same time are always $a(x), b(x), c(x)$ then the integral u in space I will have at least as many values that make integral infinite as there are in that span of integral w or one less, and a maximum of as much it would have in that span integral v or just one more. This theorem serves as a basis for studying the

number and arrangement of infinity of integral of Riccati's equation. With careful choice of functions $a(x)$ and $c(x)$, so that the appropriate equations can be integrated, he gets improvements of the existing results.

It is shown afterwards that with the corresponding shift from one Riccati's equation comes to another so that the zeros of the first value which make the integral infinite are second. This ensures that the problem of the number and distribution of zeros is reduced to corresponding problem for values that make the integral infinite.

In resume, following the line of Poincare, Picard and Petrovic, he deals with the problem of finding multiple zeros, the horizontal and vertical crease points and extreme values as well as asymptotic behavior of integrals (solutions).

The third part shows how integral for requested Riccati's equation can approximate from „the bottom“ and „above“ with the integrals of other equations.

The last, fourth part is devoted to the mechanical integration of Riccati's equation. The significant historical notes about the works and constructions of Pric, Jakobi, Kleric and Petrovic are given.

We should note that the thesis is written in a beautiful style and fluent language, in the manner of the time, which means that the definitions and positions are not given explicitly. Theorems are, in fact, the conclusions of previous considerations. Also, only authors are quoted, and not their works, making it difficult to analyze the originality of the results.

Mathematical works

As we already mentioned, Sima Markovic, in 1919 in Yugoslav Academy of Sciences and Arts, published the work entitled On the equation $(y')^2 + y^2 = w(x)$. The issues he deals with here are, similar to the thesis, research of the zero, the extreme values, asymptotic behaviour and the like, for the given type of equation.

Area of Sima Markovic's interest also was the methodology in teaching mathematics. That is no wonder when he was, beside being a good mathematician, at the same time a good lecturer and teacher. His views regarding the teaching he presented in article About the movement for reform of mathematical teaching only printed in the Gazzete of the Yugoslav Professor Society in 1932, although it was written as a report for the professorial assembly in 1920.

It is difficult to explain here and discuss all those views of Sima Markovic which relate to the content of teaching material, its layout and editing, the role of history in teaching mathematics and the like. He also talks about the textbooks, making curricula, teacher education and taking professor exam.

In addition to unloading of teaching, as he says „unnecessary burden“, for which he states plenty of examples, he advocates the introduction of elements of differential and integral sum. He speaks what and how students should learn and in what way. It is interesting that he proposes the introduction of drawing and music education as a compulsory subjects, at least until the sixth grade.

Sima Markovic notes that in senior grades „More attention should be directed on logical thinking and logical expression of thought. Accuracy and conciseness in thinking and expressing thoughts, these are two great features of the human spirit, which develop mathematics more than any other science.“ However, he in accordance with his philosophical beliefs, believes that the general and great illusion is that mathematics is „a purely abstract and purely deductive science“ and says that: „like all other sciences, has its source in experience and in needs of practical life.“

His views on manners of how the reform of mathematics should be implemented are also interesting. He specially advocates for the reform of professor exam and believes that there are not enough people „who would so thoroughly knew the methodology of secondary schools subjects and who would be able to examine on the professorial examination“. He believes that „the university professors are not for the job, because they are not interested in that job“ but, for the pupose, young high school teachers should be educated „abroad“.

We should point out in the end that the work of Sima Markovic in the field of mathematical sciences was studied by Dragan Trifunovic.

Theoretical work on the national question

Most likely that Sima Markovic is best known today for his political struggle which he primarily conducted over so-called „national question“. That was also a central political issue in the twenties in just created Kingdom of Serbs, Croats and Slovenians. This issue, naturally, could not be avoided by Communist Party.

His views, which represented the basis for heated debate and subsequent fractional struggles, he presented in several articles and speeches, which were gathered and published in the book titled „Tragedy of small nations“ by Desanka Pesic in 1985. This is normally the title of his article published in 1919 in „Worker’s newspapers“. Among these materials we specially emphasize the book *The national question in the light of Marxism*, written in Vienna in 1922 and published in Belgrade in the September 1923, and brochure *Constitutional question and the working class of Yugoslavia*, written in Pozarevac prison at the end of 1923 as a rеспonse to critics of the above book.

In the afore mentioned book he first points out and proves that the Serbs, Croats and Slovenians are three different people, and that the highlighting of the thesis of one three-name people is in the service of Serbian imperialism. That imperialism is implemented through state centralism which should allow for Serbian bourgeoisie to dominate over more developed Croatian and Slovenian bourgeoisie. Therefore, national question

objectively exists, but after the recognition of the right to self-determination, which needs to be done, it boils down to the constitutional question. As currently, by Sima's assessment, there is no desire for separation, the issue must be solved, and immediately, within the bourgeois state by giving broad autonomies. Resolving this issue strengthens the unity of the proletariat and creates conditions for future social revolution.

This Sima's solution is contrary to the view of the „left“, who were under the influence of the Comintern, that it was „revolutionary situation“ and that discontent of the „the oppressed people of Yugoslavia“ should be used for the purpose of raising the „world revolution“, and for which the Balkan is most suitable. It is interesting that the Comintern even after the renunciation of world revolution retains a negative attitude towards Yugoslavia until the mid-thirties and the strengthening of fascism.

Sima Markovic believes that communist policies in support of reasonable requirements of the Croats and Slovenians should be principled and consistent, but he was against the „aggressive Croatian and Slovenian nationalism“, as he was against such the same Serbian. He is aware of the fact that people in many parts of the country are intermixed and stands for the referendum decision in regard to borders of autonomous regions.

Of course, he even thought about the position of minorities within the framework of autonomies and believes that this issue can be resolved in the „regime of full democracy ie. national equality“. He is particularly interested in Macedonian issue and says: „it will be solved only when it is observed from the height of interests of ALL Balkan nations, united in ONE economic and political alliance...“ Further he says: „Alliance of the Balkan nations would mean an economic and political emancipation of the Balkan from the bondage of West European imperialism...“, and „Western-European imperialism comes as the biggest enemy and biggest obstacle to the agreement and the unification of the Balkan nations.“ According to Sima, of course, the Macedonians in Yugoslavia should not wait for this general solution, but should immediately obtain autonomy within Yugoslavia as well as everyone else.

Sima Markovic, a great fighter for the preservation of Yugoslavia, used to say and in 1923 wrote: „Yugoslavia, in today's borders, can only survive as democratic state – or it will not exist.“ We know what happened to Yugoslavia and how democratic it was. We believe that Sima Markovic was right because he did not claim that some possible democratic Yugoslavia, of that time's borders, would survive. Our opinion is that it would not and that it simply was within the wrong borders. This, of course does not mean that one day an even greater Yugoslavia or Balkania or something similar would not be created.

Note, finally, that in creating a bibliography of works of Sima Markovic, as well as the works about him, we used the results of research that were carried out by Dragan Trifunovic, Desanka Pesic and Zivorad Spasic.

I thank colleagues Slavisa Pesic and Zarko Mijajlovic who read this text and provided useful comments and suggestions.