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The science-rescuing activity of Albert Szent-Györgyi and its roots in Hungary after 1945

In the Hungarian language the word 'master' – according to some of our writers[1] – is one of our most beautiful words. Perhaps the 'responsibility' included in this word's meaning which gives this phrase a special patina. When the researcher at the peak of his career calls his former boss a master, it means there must have been some mutual trust between them, and actually it refers to a sincere respect for the named person. Our Nobel Prize winner scientist, Albert Szent-Györgyi wanted to picture this respect – when he was the only one of the speakers who called the former Minister of Education[2] his master.

My aim is to show the home roots of the science-rescuing activity of Albert Szent-Györgyi after 1945 and to make you see how his experience from abroad contributed to his activity. I want you to picture how his environment and his close friends were able to have an effect on this Nobel Prize winner, who was always willing to accept and take in a great deal of different ways of thinking creatively. In my research I used Albert Szent-Györgyi's so far bibliographically not adapted statements, original archives, documents relating to the subject, and I also adapt scientific literature dealing with the Soviet scientific model in Russian language and a contemporary American Congress report.

Klebelsberg, who was a broad-minded politician, wanted and was able to bring Hungary nearer to Europe not only in the field of education, but also on the road of science policy. His main idea was that it is not the sheer number of population that can make a nation big[3]. (This deep historical thought was one, which could save the nation in the common talk of our country, mutilated by

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[1] In Magda Szabó's novel the charwoman called Emerenc Szeredás calls the writer's husband Tibor Szobotka her master, as her employer. See in Magda Szabó: The door, Magvető, Budapest, 1987 p. 25.

[2] Albert Szent-Györgyi: The memory of my master. The memory of the count of Kunó Klebelsberg [Memorical speeches and mementos about the Count of Kunó Klebelsberg], Egyetemi Nyomda, Budapest, 1938 pp 338–40. Albert Szent-Györgyi fondly emphasized the almost intuituve intellect of Klebelsberg; with the help of this talent Klebelsberg was able to see through and understand the problems of natural science.

[3] Kuno Klebelsberg: Research and education [A lecture at the general assembly of the Association of Higher Education] also published in Kuno Klebelsberg: The Last Accords, Atheneum, Budapest pp 191–201.

the Treaty of Trianon.) "A nation can only become big, if there is independent research in the country." – that is not only truth discovered by other nations is taught – but the nation itself works hard to come up with independent results[4]. Humboldt, who was held in high esteem by Klebersberg, had a conception of the university, which is an institution where education and research coexist and have an improving effect on each other. But by the beginning of the 20th century, capital financed institutional research was formed in the USA, also in England and in France. And as his emperor requested him, Harnack wrote in his memorandum that Germany should lay stress on establishing research institutes. As a result of this memorandum the Emperor William Society was formed from the industrialist and merchants of Germany and this society created a lot of research institutes in Dahlem.

Klebelsberg adopted Humboldt's model to the Hungarian conditions when he undertook the task of building up three universities in the countryside[5] in Pécs, Szeged[6] and Debrecen where education and research went on at the same time. The science policy of Klebelsberg had three keystones: the first of them was the university[7] which united the basic functions of education and research, the second was the college, whose function was only education, the third was the research institute which dealt with research only.

To catch up with other nations in the field of research Klebelsberg established the Hungarian Biological Research Institute in Tihany[8], he got the sup-

[4] Klebelsberg considered the Prussian science policy a role model, because it served as a strong basis for Germany's future. According to Klebelsberg there are three basic institutions which determine science: academy, university and research institute. This idea of his comes from Leibniz who was the founder of the Academy in Germany and Humboldt finished his heritage. Klebelsberg op. cit. p. 3.

[5] Klebelsberg might have his inspiration from the other great character of science policy, Althoff, who thought the right location for the university was in the countryside – it was an Anglo-Saxon model (Oxford, Cambridge). Klebelsberg op. cit. p. 5.

[6] According to the XXV. article of 1921, the Hungarian Royal University of Arts and Science named after József Ferenc from Cluj was provisionally placed in Szeged. See Péter Hencz: The count of Kuno Klebelsberg, the builder of the University of Szeged. Szeged, 1998 pp. 26–30.

[7] Klebelsberg created the concept of the Collection University, because in his opinion at the public collections it was also very important to have the research, as a principle beside the basic function of preservation, because this way they could become scientific institutes. Klebelsberg op. cit. p. 7.

[8] Klebelsberg called home Géza Entz and Olga Sebestyén from abroad to do research work in the Research Institute just the same way as he did call Albert Szent-Györgyi

port of the Rockefeller Foundation for Szeged, established the Council of Natural Science with separate financial basis of supporting science, he organized The Széchenyi István Society for the private sponsors, he classified the badly-financed Science Academy into the status of the Collection University so that way he was able to finance the research work there[9]. "because in this country yet there will be research and because we will have research we will not end up in the status of small nations"[10] – this was the encouraging promise and this promise was proved by the Nobel Prize won by Albert Szent-Györgyi.

The scientist, Albert Szent-Györgyi came back home after living 11 years in Western Europe. He left Oxford and the world-famous Professor Hopkins behind after Klebelsberg asked him to return home with the support of the Rockefeller Foundation[11]. Albert Szent-Györgyi, who was highly respected by other researchers, came home.

Klebelsberg appointed Albert Szent-Györgyi's best friend, Zoltán Bay the position of the university's public lecturer of the Department of Theoretical Physics, University of Szeged the same year. Zoltán Bay said about Albert Szent-Györgyi's years, spent in Szeged: "In spite of being a young man, Szent-Györgyi – who in addition looked a lot younger than his age – achieved significant scientific results. He was open-minded and he expressed his sincere opinion…"

Albert Szent-Györgyi's research work compelled greater and greater professional admiration of the international scientific life, due to his open-mindedness to different ways of thinking – this originated from the Anglo-Saxon environment – and he was a good lecturer, too. Albert Szent-Györgyi, who knew Europe well, and already visited the USA, in 1935 visited Leningrad and Moscow together with his colleagues, when the 15th International Physiological Congress was held. The fact, that the Soviet Union organized such a scientific symposium of importance came as a surprise to the international scientific communities. This is how Albert Szent-Györgyi remembered the event:

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back home in 1930. http://www.blki.hu/BLKI/history-foundation_hun.htm the date of download 15 May 2014.

[9] Klebelsberg op. cit. pp. 11–12 Of course at the clinics, founded by him, the research was supported.

[10] Klebelsberg op. cit. p. 12.

[11] The protracted building of the laboratory (in Dóm Square) was speeded up by the foundation which gave 1 million pengős as financial aid. The negotiator was Zoltán Magyary. See in: Albert Szent-Györgyi by Ralph W. Moss published by Typotex, Budapest, 2003 p. 80.

"When Pavlov convened the congress in the name of the Soviet Union in 1932, it was a surprise for all of us. We could not imagine how the Soviet Union felt confident to organize such a big scientific event so shortly after the revolution. For this occasion they needed not only hotels and conference rooms, but big laboratories, good scientific equipment and independent results as well."[12]

The scientific public opinion had reservations about the faraway almost exotic country because of its social changes and huge underdevelopment. As this big country was closed for foreigners and the scientists of that era did not have on-hand experience, this congress meant some kind of burst into the scientific life. It is reflected in the contemporary American medicinal journal's report[13], too. The participants in the congress were amazed not only by the luxurious high level cultural entertainment, catering, the engineering punctuality of the organization, but by the deep respect they gained among the inhabitants of the two cities. The congress had two more special attributes, which made it really different from other congresses. The first one was that science was reputable[14] and popular[15] with the society and the other one was that it was significantly supported by the state. These two – we can say – national attributes could have a great influence on the young Albert Szent-Györgyi. It is reflected in his comment, which he made when Gyula Kállai paid him a visit in 1942. They were talking about the possible outcome of the war and both thought the Soviet Union had a chance to win

[12] Albert Szent-Györgyi: My experiences related to the Soviet Natural Science. In: The thirty-year-old Soviet Union. 1917–1947 published by Corvina, Budapest, pp 164–167.

[13] A. C. Ivy M. D.: The Fifteenth International Physiological Congress, Leningrad and Moscow, August. 8–18. 1935. The American Journal of Digestive diseases Vol. 2 Iss. 11. (November 1935) 692–695. http://link.springer.com/article/10.1007%2FBF03000983#page-1 date of download: 15 May 2014. The participants in the conference - among them the correspondent also – arrived in Leningrad equipped with chocolate and dried fruit, but they received a sumptuous hospitality and lived in luxurious circumstances.

[14] In the Soviet Union „(The keynote of these adresses was) The high regard for and the great attention given science by the workers and the goverment." said Professor Karpinsky, the president of the Soviet Academy of Sciences. The American correspondent absolutely agreed with this. Ivy A. C. op. cit. p. 692.

[15] The correspondent emphasized that there were a lot of enthusiastic people who took part not only in the plenary but also in the section meetings (he calls them faithful attendants). There was even a section lecture where the attendance was as much as 1500 people. (Altogether 1200 scientific researchers took part in the conference). Besides, the whole conference, the plenary meeting went on in an enthusiastic atmosphere. See Ivy A. C. op. cit. p. 693.

the war, Albert Szent-Györgyi emphasized the important role science played in the Soviet Union[16].

As a well-known antifascist[17], Albert Szent-Györgyi was forced to hide, so in January of 1945, the Red Army was a real liberator for him as they actually put him and his family in a safe place[18]. After 1945 the Hungarian public opinion wanted to prove, that the culture of Hungary is valuable and it is also the integrated part of the Cultural Friendship culture. There was an enforced explanation: Hungary was only embroiled in the war and the Hungarian nation cannot be characterized by massacres but we are constantly looking for friendship. That's why the Hungarian-Soviet Education Society was founded and there was a good example of wishing to near the different cultures: the journal called Irodalom-Tudomány which was edited by Albert Szenty-Györgyi and by his friend Lajos Zilahy, the writer. In the first issue of the magazine, December 1945 in one of his articles Albert Szent-Györgyi proclaimed a science-rescuing thought: he wanted to give a possibility for scientific articles to be printed for the first time, because otherwise they had no chance for publication due to the interruption of the press after the war[19].

It was almost natural, that Albert Szent-Györgyi became the honorary president[20] of the Hungarian-Soviet Education Society which was formed in

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[16] Gyula Kállai: The law of my life. 2nd volume published by Magvető, Budapest, 1980. A visit to Szent-Györgyi pp 136–140. „The science will be needed there as well. I hear the science has such an important role in the Soviet Union." quotation from Albert Szent-Györgyi.

[17] Sándor M. Kiss: From playing politics to the opposition. About the history of the oppositional group and political movement lead by Albert Szent-Györgyi Mozgó Világ 9th volume (1983) No. 11. pp. 113–128. The author describes the working of the SZESZ (Organization of Szent-Györgyi) with the thoroughness of a historian and stresses the activities of the group led by Várnai: starting from the trip to Istanbul up to the end of the war.

[18] R. W. Moss op. cit. chapter 13. Caviar for breakfast.

[19] „…We offer the scientists the pages of Tudomány, so that they could immediately publish their works summarized" that was the editor's promise. „We must not close ourselves in the ivory tower, we have to show as often as possible, that we exist, we work and we are just as valuable as others. „We have to take on the task of the popularization of science, briefly and popularly." Letters to „Tudomány" Irodalom-Tudomány, 1 (1945) 1st number p. 143. It is probable, that his own life experience was the source of this idea, as we know that in the fascists' era he was hiding in the Swedish Embassy and he was collared because of a scientific publication sent to Sweden. Compare Moss R. W. op. cit. p. 160.

[20] MNL. OL. XIX-B-1-h Ministry of Interior, Head Department of Association sz. n. 83. d. The minutes were taken on June 9, 1945, Budapest of the Hungarian-Soviet Cultural

June. A very wise thinking of the Nobel laureate and his friends lead to this conclusion: after the hell of the Second World War there was no other possibility just to make peace with the given situation[21] and the only peaceful way of doing that was building up friendship and cultural connections with the Soviet Union.

Hungary was Hitler's last satellite state in the war nevertheless Szent-Györgyi was the first who could cross the Soviet frontier (some other Hungarian scientists followed him) while the Red Army had not returned back from the battlefield. Szent-Györgyi arrived at the 220th anniversary of the Russian Academy of Sciences in June 1945 and he was the guest of the Soviet Union a lot longer, than the others. He wanted to see how the minorities lived in the Soviet Union so, as he requested, he was shown around Armenia and Georgia by the Association of International Cultural Connections. Just like his friend Lajos Zilahy, the writer, Albert Szent-Györgyi who was a humanist thought that the two nations were close to each other, because they had very similar souls, and according to him this was the most important criterion for their friendship: The Soviet people are helpful, open to accept other cultures[22] "We love our culture without treading on other nation's culture and we love our homeland without hating other countries" – this way he tried to make peace. The congress – as the first scientific world meeting went on in the spirit of goodwill and the Soviet Union tried to be the initiator, to integrate the world of science, "because as Professor Kapitza emphasized – there was only one real world of science."[23]

His first experience was just made stronger 10 years later when he visited the Soviet Union for the second time. He was amazed to see the scientific-technical development which took place during the ten years, the scientific-technological staff was excellently equipped and both the young and older generations of the researchers were enthusiastic. He also visited schools and

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Friendship Society's General Assembly. The author, Zilahy Lajos, became the president of the association, who was called upon the task by Barulin embassy councilor, knowing his antifascist activity.

[21] „Hungary became a neighbouring country to the Soviet Union… The old political and social system of Hungary collapsed and we Hungarians have to rebuild our own homeland. Szabad Nép 2. (2nd August 1945) no. 106. p. 2.

[22] Szent-Györgyi about the Soviet people. Magyar Nemzet 1 (8th September 1945) no. 106. p. 1

[23] Szent-Györgyi said that the scientific conference held in Moscow was highly important. Magyar Nemzet (6th July 1945) No. 53. 2.

children's homes to study the education, the instruction of the future generation. He was happy to see that wide scientific interest which was – according to him – almost unique in the world. You could buy academic journals at the newsagents. He emphasized the fact, that the Soviet Union used 1% of its national income for scientific research. Many times he spoke of the big, organized scientific institutional system in terms of highest praise, this system encompassed all the country and was spread across the specialization of natural sciences, the head of this was The Soviet Academy of Sciences[24].

In the daily newspaper Délmagyarország he firmly talked about his further plans: "I saw a real model in the Soviet Union what we wanted to achieve here in the basin of the river Danube"[25]. The friends of Albert Szent-Györgyi, who also had some good experiences abroad, were ready to work for Hungary. His best friend, Lajos Zilahy, the writer, visited the USA. There he saw how successful the New Deal was, so as soon as he arrived back home, he exercised all his influence to support the rural sociologists financially[26].

From the very beginning Albert Szent-Györgyi urged radical changes in the Hungarian Academy of Sciences[27], which itself wanted to be reorganized. First his efforts were not very successful, although these efforts were supported by his faithful colleague, Zoltán Bay. After his visit to Moscow, Albert Szent-Györgyi decided to take a firm step (Zoltán Bay encouraged him to do so) they founded the Hungarian Academy of Natural Sciences[28]. The journal Irodalom-Tudomány which was edited by Albert Szent-Györgyi and Lajos Zilahy talked about this event of September 1945 in the fullest detail.

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[24] The impressions of my travels in the Soviet Russia. Szabad Nép 2 (August 2, 1945) No 106. 2. Magyar Nemzet, see ibid. My experiences related to the Soviet Natural Science. In: The thirty-year-old Soviet Union. 1917–1947 published by Corvina, Budapest, pp 164–167.

[25] The statement of Dr. Szent-Györgyi about his trip to Moscow. Délmagyarország 2. 7th July 1945.

[26] Katalin Varga: Our operation is quite serious – the letters from Zoltán Szabó to György Buday. Forrás vol. 44 (2012) no. 6. pp 75–92. In one of his letters, Buday writes about Zilahy that he only believes Roosevelt about the importance of sociology. He did not believe them before, when they were talking about it. The operation included Zoltán Gáspár, Lőrinc Szabó and Géza Féja.

[27] Lóránt Tilkovszky: The Hungarian Academy of Sciences after the liberation 1945–1948 pp. 349–361. In: One and a half centuries of the Hungarian Academy of Sciences 1825–1975, published by Akadémiai Kiadó, Budapest, 1975.

[28] József Cavallier: The Hungarian Academy of Natural Sciences. Irodalom-Tudomány 1. (1945) no. 1. pp 117–123.

In the historical introduction the author emphasized the model of the Russian Academy and he identified with pain, that in our homeland "except for the era of Kunó Klebersberg there was almost no care about natural sciences and very little care about social sciences."[29]

When he looked through the European ancestors (Academic Françoise, Royal Society of London) the author stated that the Hungarian initiative closely resembled the Academy of Peter the Great and the modern Russian Academy of Sciences. The Hungarian Academy of Natural Sciences "on one hand provides jobs for scientists and on the other hand it is an advising and leading forum which helps to use the discoveries of natural science professionally and economically". Albert Szent-Györgyi found an investor to deal with the economic questions and finance them, it was István Ráth Dr, an entrepreneur.

There were 40 members in the General Assembly on September 6, 1945, who founded the Hungarian Academy of Natural Sciences, the following were the most famous among them: mathematicians: Lipót Fejér, Frigyes Riesz, physicists: Zoltán Bay, György Békésy, Pál Gombás, chemists: Győző Bruckner, Kálmán Laki, Brunó Straub F., Tibor Erdey-Grúz, István Náray-Szabó, Béla Issekutz, biologists: Aladár Beznák, Miklós Jancsó, Kálmán Sántha, Albert Szent-Györgyi.

Members from abroad: György Hevesy, Mihály Holényi, Tódor Kármán, Pius Koller, János Neumann, Marcel Riesz, József Tomcsik, Jenő Wigner, Frigyes Verzár, László Zechmeisrter. The officers of the Academy consisted of the following: the president was Albert Szent-Györgyi, the vice-president Zoltán Bay, the financial director was István Ráth[30], the secretary-general was Pál Gombás, and the secretary was József Cavallier.

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[29] József Cavallier ibidem The two different groups of science can never work to harm or take advantage of each other. Compare József Pál: From the Unity of Life to the Coequality of the Forms of Consciousness. Worries of Albert Szent-Györgyi in Times of War. Szeged, vol. 24. (2013) no. 12. pp 7–10. See the same volume.

[30] István Ráth was Szent Györgyi's friend too, but soon the communist leadership found him conspicuous because of his financial influence. So in the summer of 1947, when Albert Szent-Györgyi stayed in Switzerland he was arrested and "interrogated". Albert Szent-Györgyi had to bring every influence to bear to get him free. Supposedly, this personal insult of his was the last thing to make him stay abroad and never come back to Hungary. Compare Moss R. W. op. cit. p. 180; Zoltán Bay: The life is stronger. Csokonai-Püski, Debrecen-Budapest, 1990. p. 200. There are some people, who mention the arrest of Lajos Zilahy too, but there are no documents about it whatsoever. Compare: Tibor Szabó-Andor Zallár: Albert Szent-Györgyi in Szeged and the Collection of Szent-Györgyi. Archives of Csongrád County, Szeged 1989. p. 79.

This Academy, organized by Albert Szent-Györgyi had members from abroad, too – this way it was a unique experiment in uniting the homeland Hungarians with the ones living abroad. It was the unity of natural sciences of that era on institutional level as well as on the level of intelligence[31]. This way Albert Szent-Györgyi formed a Hungarian workshop without walls, which was the best of the world's natural science, Albert Szent-Györgyi also informed the press about the reason why it was necessary to establish this institution. "Without modern science it is not possible to rebuild this country… and the present Academy neither modern nor scientific enough."

Albert Szent-Györgyi considered the matter of intellectual and cultural renewal as important as the problem of bread and the shortage of coal. We ought to put experts in important positions, not "the knights of the era."[32]

The Hungarian Academy of Natural Sciences planned to edit an international scientific journal, after some disputes this journal was first issued in the summer of 1946. There were mathematical, physical, chemical, physiological actas in two languages: English and French. Their titles were: Hungarica Acta Physiologica, Hungarica Acta Mathematica, Hungarica Acta Chimica, Hungarica Acta Physica – the publisher was: Academiae Scientiarum Naturalium Hungaricae 1946. They were regularly printed only for two or three years and when Albert Szent-Györgyi left the country, they did not appear any more. In 1948 István Rusznyák published the journal Hungarica Acta Medica, the publisher was the institute Academiae Scientiarum Hungaricae.

The Soviets were very interested in the Academy even during the peace negotiations - then the cultural connections were not so close – they asked the Hungarian Ambassador Gyula Szekfű about reaching the Academy organized by Albert Szent-Györgyi.[33]

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[31] Ferenc Nagy: Albert Szent-Györgyi and the Hungarian Nobel Prize winners. Műszaki és Természettudományi Egyesületek Szövetségi Kamarája, Budapest 1993. 31.

[32] Albert Szent-Györgyi urged the earliest possible success of experts. Magyar Nemzet 1st volume (6th December 1945) no. 179. 1.

[33] MNL OL P 2148. entry 2: The minutes of the meetings held in the National Centre, reports, summaries about the functioning of the Organization of Hungarian Standards Institution, suggestions, positions about social, economic and political questions etc. Signature: Gyula Szekfű. The developing communist power was not interested in the Nobel Prize winner scientist's key position in the Hungarian-Soviet connections. c. f. Tasiné Csúcs Ildikó: "I am afraid, that the gentlemen made the wrong choice." Notes from the operation of Hungarian-Soviet Education Society under the presidency of Lajos Zilahy – 10. under publication.

Albert Szent-Györgyi had some supporters in the fights at the Academy for example Zoltán Bay – who had the very first and everlasting friendship with Lőrinc Szabó[34] – and the journalist and Prime Minister Ferenc Nagy[35]. (The Hungarian history of science did not write about the effects of human relationships between our greatest natural scientist yet.)[36]

In the summer of 1946 as a result of the determined fights by Albert Szent-Györgyi and his colleagues and the blessed work of Dezső Keresztury the Hungarian Academy of Sciences was reformed. It had four sections: the 1st and 2nd had human character, the 3rd was about the lifeless natural sciences and the 4th dealt with the living natural sciences[37]. The 3rd section was led by Zoltán Bay, who was a theoretical physicist, Albert Szent-Györgyi was offered the position of the president but he did not accept it, Zoltán Kodály became the president, Albert Szent-Györgyi was the vice-president.

The modern people want to ask the following question: whether the great respect of science in the Soviet Union is an achievement of the new system or it has deeper roots in the society. To be able to answer this question we have to outline – at least give a rough outline of – the history of the Russian Academy of Sciences and the history of the Russian science and to stress the momenta important to us.

In the beginning of the 18th century there were no scientific institutes in Russia[38], but at the same time the country was in sore need of professional knowledge. The European (not Russian) science was concentrated at the universities, but these institutes were under the influence of clerical circles.

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[34] Zoltán Bay had a great friend László Németh, their correspondence improved László Németh's scientific knowledge. Zoltán Bay, László Németh and Lőrinc Szabó were the students of the Reformed College of Debrecen.

[35] Bay remembered about this: "We sat around him (Ferenc Nagy) just like scientists around Gábor Bethlen." The career and example of Zoltán Bay in documents. Compiled by Ferenc Nagy. Better – OMIKK – Püski, Budapest. 1993. 96. Ferenc Nagy, the Prime Minister was a big patron of scientists and artists (Zoltán Kodály) ibid p. 97.

[36] József Pál: The poetry of Albert Szent-Györgyi. See the same volume. No. 7 за 2002 г. http://magazines.russ.ru/oz/2002/7/2002_07_24.html

[37] L. Tilkovszky op. cit. pp. 353–354 and József Pál: From the Unity of Life to the Coequality of the Forms of Consciousness. Worries of Albert Szent-Györgyi in Times of War. Earlier there was no biological-medicinal department, no technical department. See the same volume.

[38] Гавриил Хромов Российская академия наук: история, мифы и реальность. «Отече-ственные записки»

Perhaps it was Leibniz[39] who suggested establishing a scientific center to Peter the Great. As Peter the Great did not have good relationship with the church[40], he may have found appealing the idea of a secular, merely researching institute, financed by himself, the emperor. This institute had self-government and was based on the idea of the republic of science[41]. It was not an independent society of scientist, as in Europe, but it was centralized state scientific institute, its prestige was due to the financial help coming from the government and coming from the tsar. The task of this institute was "to teach and improve science so that the whole nation could profit from these teachings and improvements."[42] The edict – which was partly written by Leibniz and Wolf – was to rule the operation of the Academy and had three targets to meet by the body of the best scientist

- to study and improve sciences
- to educate the youth, who were suitable for education (this later became the education of candidates)
- to train some people, to make them able to teach the youth the basic elements of all sciences.

So this Academy united 3 tasks, the task of a research institute, the task of higher education, as well as the task of the education of candidates. In addition all the members of the Academy were obliged to write down the system of their specialized branches of science in Latin language and to teach a lesson of their subjects in public every day. All the Latin speeches were translated

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[39] Ágnes Hangodi: The plan of Leibniz about getting science and culture to Russia Ponticulus Hungaricus vol. 15. no 7–8 (July-August 2011). Leibniz considered Russia some kind of tabula rasa, where he could send the European culture without its wildings. He summarized his plan in 8 points about the most important actions and he suggested that Peter the Great established 10 advising institutes and one of these institutes dealt with scientific cases. http://members.iif.hu/visontay/ponticulus/rovatok/hidverok/hangodi-leibniz.html, letöltés dátuma. 2014. máj. 16.

[40] The Eastern Church considered all foreign cultures contagious. They prevented Boris Godunov from founding a university 100 years before, they protested against the guest professors, because they bought foreign cultural influence in the country. Peter the Great became the head of the church; he did away with the post of the patriarch and introduced the Saintest Synod, which was led by the tsar. http://members.iif.hu/visontay/ponticulus/rovatok/hidverok/hangodi-leibniz.html date of download: April 23, 2014.

[41] Гавриил Хромов op. cit. p. 2: "The idea of a pure, secular institute, supported by the monarch, the so-called revolution of scientists was that time modern, even revolutionary."

[42] S. L. Vavilov: The role of the Academy of Sciences in the progress of our science. In: The history of Science in the Soviet Union. Akadémiai Kiadó, Budapest, 1950, pp. 33–48.

into Russian and published. So the Academy also had the task of popularization of scientific knowledge which was necessary to make the people see the benefits of their work. Peter the Great wanted to compensate the huge social underdevelopment "because if we consider, that there are no elementary schools, secondary grammar schools or seminaries, where the youth could start learning and – what is impossible at the moment – could go on for higher education to get a scientific training, we can see that in these circumstances universities are no use at all"[43] that's how the edict of foundation (28 January 1724) described the special role of the Academy and the malfunction of the university at that time.

While in Europe the system of science and education was built up by starting from the basic education, in Russia it happened exactly the opposite way. First they established the highest institute (the Academy) and it had all the functions for a while, then built up under itself the other dependent institutes, such as universities[44], secondary grammar schools[45], elementary schools. In Europe for a long time, only the Pope had the right to establish universities, in the Russian Empire it was the right of the Emperor. At the Russian University in Moscow there was no theological faculty, the theological education took place in different institutes.[46]

The secular character of the Academy and respectively of the University was proven when on an occasion the Moscow Secondary School was not able to send enough students to the university and the Senate gave the theological seminars in Néva and Novgorod permission to send their students to the university[47]. The education was so important, that the leaders of the Academy

[43] S. L. Vavilov: op. cit. p. 33.

[44] First Peter the Great founded a university in Saint Petersburg, but it fell short of his expectations, so after the suggestion of Lomonosov they established a university in Moscow in 1755. Normally, they date back the Academy to this year because the university gave the supply. C. f. Гавриил Хромов op. cit. 2. see М. И. Радовский: М. В. Ломоносов и Петербургская Акабемия 1961. Ленинград. 123.

[45] The denotations of the scientific literature refer to this too, academic university or academic secondary school see also М. И. Радовский op. cit. Учебное Дело 115–164. passim.

[46] М. И. Радовский op. cit. Educational matters, p. 122. "the academic university did not have to have a theological faculty", c. f. http://hu.wikipedia.org/wiki/Moszkvai_%C3%81llami_Egyetem date of download: April 23, 2014. These institutes were seminaries (of the church).

[47] М. И. Радовский op. cit. Educational matters, p. 116. Later in March 1748 some more seminarists could get in the university but they had to take their entrance exams in the history section ibid. p. 121–122.

appointed M. V. Lomonosov as the secretary of public education, because they wanted that "at the university and at the secondary grammar school everything was in good order."[48] It was a well-known fact that M. V. Lomonosov was the greatest supporter of improving Russian scholarship. In the beginning the secondary grammar school had some tens of students and the university had even less. There was a breakthrough when they introduced the instruction in the mother tongue, Russian language (instead of Latin language) in the education and also in the popularization of Scientific Knowledge. Lomonosov, the polymath and his Russian Grammatica played an important role in achieving this breakthrough.

According to the above mentioned, the Academy of Sciences in Saint Petersburg had all its first scientists coming from abroad. Most of all they were Germans like Leibniz or Swiss like the mathematician Leonhard Euler, who considered Russia to be his second homeland. There was the Dutch Daniel Bernoulli and the Russian scientists appeared only after a quarter of century later, for example Lomonosov and Trediakovsky[49]. The fact that the Academy of Saint Petersburg became Germanized[50] caused a huge problem. In the beginning the students of the Academy were only foreigners, too. Lomonosov tried to solve this problem by making obligatory the general instruction in the mother tongue, Russian.

The Academy was responsible for printing books all over the country, the classics of the world literature in Russian and respectively the popular scientific literature also in the mother tongue[51]. Catherine the Great established an Academy in Moscow, it was made after the model of the French Academy[52]. This new Academy was a purely human institute, dealt with only the Russian

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[48] М. И. Радовский op. cit. 115. "So that at the university and at the secondary grammar school everything was in good order." (translated from Russian into English)

[49] For a while even the Vice President of the Academy was a certain Schumacher and Lomonosov very often came into conflict with him because of his bureaucratic attitude. See also М. И. Радовский op. cit. p. 115–116.

[50] The independent Academy of St. Petersburg became a poorly German institute in short time, where the Russians were tolerated as annoying necessity. See Гавриил Хромов op. cit. p. 2.

[51] S. L. Vavilov op. cit. p. 37.

[52] András Hevesi: The 300 year old French Academy. Nyugat, 1935. Volume 9. http://epa.oszk.hu/00000/00022/00596/18839.htm date of download 24 April 2014. The main objective of the French Academy also was the promotion of the French language. The criteria for the membership of the Academy were in addition: "pleasant voice and appearance and as a private individual an honourable lifestyle."

language and literature. This new Moscow Academy made the Academy of Science in Saint Petersburg livelier. Later this Moscow Academy was incorporated into the Russian Academy of Sciences as the section of Russian language and literature to complement the already existed history-philology and physics-mathematics sections[53]. By the first half of the 19th century the whole system of public education[54] was developed and 8 institutes of higher education (similar to universities) existed in the empire. When the universities were formed and became stronger and a number of scientific societies were founded, the role of the Academy lessened and its importance was also smaller, but it could keep its state prestige, the rank of the member of the Academy was as high as of the member of the council of state[55].

In the strategy of the new soviet state science became an indispensable base (sic) [56] and the state wanted to receive the high prestige Academy's support as well. Before the revolution in the operation of the Academy, the most successful was the research of human disciplines and the applied sciences (прикладная наука) were almost totally absent. The new strategy of the soviet state changed this condition because it was very generous when supporting the scientific institutes morally and with the organization. Between 1918 and 1930 the number of the scientific institutes increased fivefold (800), and in those institutes the scientists of the applied sciences appeared in great numbers.

The Academy was reluctant to identify itself with the requirements of the controlled economy, but in the end in 1931 joined the five-year plan[57]. Meanwhile the soviet state enlarged the system of the scientific researches again, so by 1933 there were 1300 different scientific institutes in the Soviet Union. (At the same time the higher education was enlarged at a faster rate). In 1933 the Academy

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[53] See Гавриил Хромов op. cit. p. 2.

[54] Alexander I. issued a decree in 1803 according to this the church had to open a school in every village, and provide teaching free even for the children of the feudal tenants. http://hu.wikipedia.org/wiki/I._S%C3%A1ndor_orosz_c%C3%A1r date of download 24 April 2014. Lomonosov initiated the provision of the equal opportunity in secondary education and eventually it was made obligatory in elementary education by a statute of the tsar.

[55] Гавриил Хромов op. cit. p. 4. Before the revolution 11.000 lecturers and scientists worked in the Russian higher education, at the institutes of Academy 212 people of whom 47 were members of the Academy (mostly elderly people)

[56] Vavilov op. cit. p 43. c. f. Гавриил Хромов op. cit. p. 5.

[57] The members of the Academy were strongly against the direct planning of science they considered this step as an unpardonable intervention by non-professionals. See Гавриил Хромов op. cit. p. 6.

became the part of the Commissar's Soviet and the reason for this was: "to draw near the Academy to serving the building of socialism[58]. The members of the Academy became the commissars of the not industrial science, they depended on the government, and as the authorities of the people's economy they divided the budgetary means granted by the state. In the soviet system they formed the Supreme People's Economic Soviet which gave the orders to the Academy and the Commissar's Soviet decided how to finance the Academy. The government regulated the operation of the Academy by statutes and proposed the specialization of natural sciences, so new institutes of physical-chemistry, of analytics, of physical-mathematics were created since the 1920s[59].

Approximately at this time Albert Szent-Györgyi visited the Soviet Union for first time (he was not a Nobel Prize winner yet). He must have experienced the same as the American correspondent: the high social prestige of the science; that science was organized and concentrated and got big support from the state. He could not have noticed the faults of this system – due to the short time he spent there – the disregarded scientists, the enclosure etc. But all these could have remained faint impressions if he didn't get the invitation from the Soviet Academy of Sciences to visit the Soviet Union again.

According to the researches the Academy and the research system did not suffer as huge losses as the Soviet people. During the war the Academy and its institutes were carefully preserved "the number of the scientific staff did not decrease, but by 1945 it was higher than before the war."[60]

So during his second visit, after the war[61], in spite of the difficulties due to the war Albert Szent-Györgyi found a more flourishing scientific system and as he was an experimental researcher he wanted to see everything, including the local Academies of the different Republics, the education, the national cultures.

Szent-Györgyi was able to see the practical use of modern scientific discoveries and wanted to adopt this method reasonably to the Hungarian conditions.

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[58] Гавриил Хромов op. cit. p. 7. Vavilov emphasizes the time, the statute of the executive committee on the 14th of December 1923 which put the Academy under the leadership of the Council of the People's commissar. The year of 1934 was also significant when the Academy was moved to Moscow (25 April 1934) and it was also amalgamated with the Communist Academy. See Vavilov op. cit. p. 45.

[59] Vavilov op. cit. p. 45.

[60] Гавриил Хромов op. cit. p. 8.

[61] In a telegram, Stalin thanked the president of the Soviet Academy of Sciences, Komarov for the scientific cooperation of scientists with the soviet power during the war. See Vavilov op. cit. p. 47.

He saw that the whole rebuilding process was under the control of the Academy, so he thought the movement should be into this direction in Hungary, too. (Tibor Erdey-Grúz also believed that it was necessary for the science to be under central control. In addition, the state of the Hungarian Academy of Sciences after 1945 strongly resembled the condition of the Russian Academy of Sciences after 1917. The human sciences were dominant and the applied sciences were completely disregarded. The latter – mainly the technology – was indispensable condition of the rebuilding. So the historical, social constellation included the need for change, even better, it gave way to the possibility of outstanding scientific progression. Anyway if we examine the members of the Academy of Natural Sciences we can state that they were in the forefront of the world.

Albert Szent-Györgyi was the heir of Klebelsberg's idea and he saw a real possibility of a great advance in science in Hungary, too. That time there were two models of science: the American model and the Russian model – and Albert Szent-Györgyi considered the latter more suitable for us to follow. He had two reasons for that – the geographical conditions and our social underdevelopment too. He, as a scientist of experimental science, was convinced by the experiences he gained in the Soviet Union. The results that were achieved there in the Soviet Union – according to him – were the results of the Soviet science policy. He was not able to see that this widespread social respect for the science had very deep roots originating from the tsars' era, but the communist power tactically considered it to be their own. Albert Szent-Györgyi, behaving as a good master – tried his best to make the Hungarian scientific life as modern as the contemporary scientific life was. Eventually, the Hungarian communist power adopted the Soviet scientific model, but not with the help of the Nobel Prize winner scientist[62].

In his autobiographical and detailed documentary novel titled: The life is stronger, Zoltán Bay precisely described those political, social, changes which took place between 1945 and 1948 in Hungary. Even based on this novel, it is still difficult to find that starting point when Albert Szent-Györgyi and the developing communist power started to drift apart. But, maybe it is not an exaggeration – according to my researches so far – to talk about the first Congress of the Hungarian-Soviet Cultural Society (7th July 1946) from this point of view.

[62] See Sándor Kónya: The suggestion of Ernő Gerő about the reorganization of the Academy. Magyar Tudomány Volume 161 (2000) No. 2. pp. 240–243. They established the Hungarian Scientific Council to transform the institutional system of the scientific research, and they let The Hungarian Scientific Council to transform the institutional system of the scientific research, and they let The Hungarian Academy of Sciences die.

The communist Hungarian leadership under the guidance of József Révai dismissed the leaders of the society (including Lajos Zilahy) before this congress, the Soviets were not told about this change[63]. As we can see from the minutes: the society was supposed to do some communist propaganda, but Lajos Zilahy and Albert Szent-Györgyi were completely against it[64]. Maybe from this point it became clear for Albert Szent-Györgyi too, that the developing communist system did not need a Nobel Prize winner scientist, European level science, but it needed party members who were eager to fit themselves to the new system, just like Zoltán Vas, Ernő Gerő. To prove that Albert Szent-Györgyi was deeply concerned about the Hungarian science here we have an extract from the book by Zoltán Bay, containing their conversation before his journey to Switzerland: (Zoltán Bay): "Tell me, Albi, you will not cheat me and it is for sure you are coming back? I do not want to hear from others, that you are not coming back home."

Albi gave him his hand and answered: "I am coming home you can be sure about that. Then we are going to decide together what to do about us and about the Academy."

A világ nagy tudósai a Szovjet Akadémia 220 éves ünnepségén.

[63] Barulin, counsellor of legation had the next reaction to the dismissal of the leadership after this event at the general assembly: „There is no need for reelecting the whole management." According to him it is not even necessary formally, to select the whole management. MNL OL P 2148. I. entry. Minutes 1. d. [52/6] no. document. Minutes.

[64] „We cannot expect neither from Zilahy nor from Háy to do propaganda. I believe it would be easy to increase the number of the members for example from 1 million to 1.5 million, using a little propaganda, these actions should be connected to the different worker's unions, to the party of Smallholders" - the words of Árpád Szakasits ibidem. Compare Tasiné Csúcs Ildikó op. cit.