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From the Unity of Life to the Coequality of the Forms of Consciousness. Worries of Albert Szent-Györgyi in Times of War

Szent-Györgyi studied the internal connections between the different forms of cognition, the secret threads that bind public life, historical knowledge and artistic creations with nature and natural sciences on many occasions. He was surprised to see that his “Master,” Kuno von Klebelsberg found, with great intuition, a rule that applied to Biology and which he, the researcher, found only as a result of one and a half decades of research.¹ Later, after the presumable end of the age considered as the “Revolt of the Masses” (fascism), he saw a new, historical opportunity only for the human mind and soul that draws from three sources. Ethics, science and arts (literature), he said, were the forms and areas of the search for truth. All three teach us that we should seek the truth, and not try to justify our truth, that all three are communications of divine wisdom.² In relation to university education, he greatly regretted the phenomenon of the presence of a spiritual proletariat: students are designated to one area only (*homo unius libri*) although they should leave the university with the love of culture and the completion of comprehensive education. The classical majors of arts and humanities should not be sharply divided from natural sciences and vice versa; this would become destructive to both, moreover, would ruin the former one.³

On Scientific Cognition

“The only aim of natural sciences is to learn the deepest truths, the deepest wisdom: to experience God.”⁴ Whoever wishes to study the laws of nature, tries to understand the uttermost wisdom, the wisdom of God. Szent-Györgyi’s

¹ *Gazdám emlékezete. Gróf Klebelsberg Kuno emlékezete.* [My Master Remembered. Count Kuno von Klebelsberg Remembered.] Budapest, Egyetemi Nyomda, 1938. 338–340.

² *A tudomány* [Science], “Irodalom és Tudomány,” 1945, 97–101.

³ *A természettudományi oktatásról* [On the Education of Natural Sciences], “Phlogiston,” 1941, 1–2. 94.

⁴ *ibidem*

theoretical stance functionally matches the mainstream of the two-thousand-year-old Christian episteme. “For the invisible things of him since the creation of the world are clearly seen, being perceived through the things that are made, even his everlasting power and divinity” (Paul, Rom. 1:20). To learn Existence, to learn God, the clear act of existence, of the paramount exceeds the human mind. In Szent-Györgyi’s words, “Therefore, natural sciences cannot give an answer to the questions of ‘What is life?’ or ‘Does life exist?’ What natural sciences can do is to merely examine the individual phenomena of life,” i.e. (in theologian’s terms) seek cause from the effect, essence from the phenomenon. In nature, the same great and eternal laws rule that give the unity of the universe whose validity is also retained in the living organism.⁵

Jewish and Christian monotheism, as opposed to the pluralist approach of Greek philosophy, built each component of God’s universe into a system which showed the unity of truth, the *one* divine intention with unbroken success. A biologist’s task is to find these in living organisms. “The leitmotif of the author’s research has always been the conviction that there is but one life and one living matter in this world. (...) This life is based on a very limited number of basic principles – and the author’s endeavor is to understand them.”⁶ “...The unit of all living matter is the cell,” the more complex organism multiplies these units. The same way the cells perform a coordinated action, so do humans form a society, and thus, alter their ways of living. As he wrote in the *Chemistry of Muscular Contraction*, there is not much difference between the lawn and the one who mows it. Muscles need potassium and phosphate, the same substances we spread on the lawn as fertilisers.⁷

“Within a complex organism, the cells are fed and sheltered. In return they carry out some special activities for the community.” A considerable part of the the living matter is built into a corresponding machinery.⁸ The relationship between the constituents shows some relevance, things work as “mechanisms” to create and sustain life. The loss of order brings destruction. As opposed to the principle of final cause mocked by Voltaire and others, the scientist has no conceptual objection. In this aspect, Szent-Györgyi seems to fully agree with Thomas Aquinas, who believed that the transcendent relevance of Providence

⁵ *Az élet tudománya*. [Science of Life] Ed. Albert Szent-Györgyi. Budapest: Új idők, 1943. 8–9.

⁶ Albert Szent-Györgyi, *Chemical Physiology of Contraction in Body and Heart Muscle*. New York, Academic Press Inc., 1953, 1.

⁷ Szent-Györgyi, *Válogatott tanulmányok* [Selected Papers], Budapest, Gondolat, 1988, 107.

⁸ In *Chemical Physiology of Contraction in Body and Heart Muscle*, 1.

created the existence of order together with the existence of arranged things. The question ‘Who created the order of functionality that can be felt everywhere?’ Szent-Györgyi asks only indirectly.

Let us shade this statement: while Thomas (like the ancient philosophers, from this aspect) came to the above conclusion only through speculation, Szent-Györgyi followed the route paved by the great Italian physicist, writer and literary historian Galileo Galilei from the 16th and 17th centuries, and put empirical aspects forward. (Incidentally, Galilei wished to understand the world written in the language of mathematics as a world created by God.) This young man from Pisa, as Szent-Györgyi wrote, went up the Leaning Tower of Pisa, carrying two stones, a big and a small one and asked his companions to observe which of the two hit the pavement first. Galilei, the first outstanding figure of empirical science, “distrusted not only the perfection of his mind but also that of his senses.”⁹ He built telescopes and discovered the satellites of Jupiter.

Science and Ethics

Szent-Györgyi began writing his work of philosophy of history and of science, *La paix, sa biologie et sa morale*, on 11 November 1938 in Liège, after receiving his honorary doctorate degree from Sorbonne University. It is a great fortune that this book could survive. The book could never be published in France. The reason may be the lack of financial resources and the author’s orientation. Szent-Györgyi viewed that the main reason behind the serious tensions in international politics was the unjust peace treaty concluding World War I; this treaty considered exclusively the interests of the victorious nations, and prepared the rise of Hitler.¹⁰ (2001:81) He started to write this book deliberately on the twentieth anniversary of the French–German armistice. Two years later, exactly on the same day, Szent-Györgyi had his inaugural speech as rector of the University in Szeged. This latter event was close to another anniversary as well: on 10 November 1872, with Rector Áron Berde’s speech, university education in Hungarian could begin at the University of Kolozsvár (Cluj).

⁹ Szent-Györgyi, *The Crazy Ape. Written by a Biologist for the Young*. New York, Philosophical Library, 1970. 14.

¹⁰ The study was published much later, in a bilingual French and Hungarian edition, in Szeged, by László Péter. (Hungarian title: *A béke élet- és erkölcstana*, translated by János Rakonczai, published by Bába és Társai, Szeged, 2001). In the Afterword of the book, László Péter described the history of the manuscript.

This short volume focuses on the following principal ideas: historical development, double ethics, morality based on Biology, peace, science, education and the tasks of the future. The author's worries for future generations can be clearly seen from these; however, we can also see his intention: he shows a way to recover from the present crisis based on (natural) scientific and biological grounds. There arose some very strong, highly influential ideas of Europe between the two world wars had a great impact on the Hungarian intellectual elite as well, and were also present in Szent-Györgyi's reasoning, although unspoken. These were the Revolt of the Masses by Ortega y Gasset, Oswald Spengler's vision on *The Decline of the West*, on *finis Europae*, and Julien Benda's warning about the Treason of the Intellectuals.

The first, marked contrast stands between the individual's code of ethics and the social man's political and ethical laws (a *cosmopolite* will serve as a solution). The taxonomic error lies in the political or the national code of ethics. The individual learned through the development of humanity not to steal and not to kill so as not to be killed. There is a natural aversion to aggression and murder in the human being, as the ex-soldier professor quoted his own example. "This is the individual's code of ethics, and that of humanity's, which is the totality of individuals" (2001:13). However, nationalism is part of it, the code of ethics formed by the collective, national interest inciting unrest between peoples. As Szent-Györgyi thought, "as an individual, he is sensible, fair and equitable; however, as a citizen of a nation, he is ruthless, unreasonable and a predator" (2001:15). The human being, having created his own individual ethics, forgot to create collective ethics. If this situation was bearable for thousands of years, then why should we worry about it now?

The answer is in connection with the development of science. A radically new situation arose when it became clear that with the advancement of technology, with the new inventions, with these technical advancements the entire world could be easily destroyed. The world became a gigantic machinery and the parts became dependent on one another. The society, however, is not a cooperation of restrictive, intelligent and ethical individuals working together for the public good, but a mass of people following ancient, wild instincts. The man of today, he claims, has no ethical responsibility nor is intelligent enough to give up the dreadful opportunity for total destruction. Several of the ideas of this study were further elaborated on in *The Crazy Ape. Written by a Biologist for the Young* in 1970, in which paper he explained the dilemma as follows: "We are forced to face this situation with our cave-man's brain, a brain that has not changed much since it was formed. We face

it with our outdated thinking, institutions and methods, with political leaders who have their roots in the old, prescientific world...¹¹

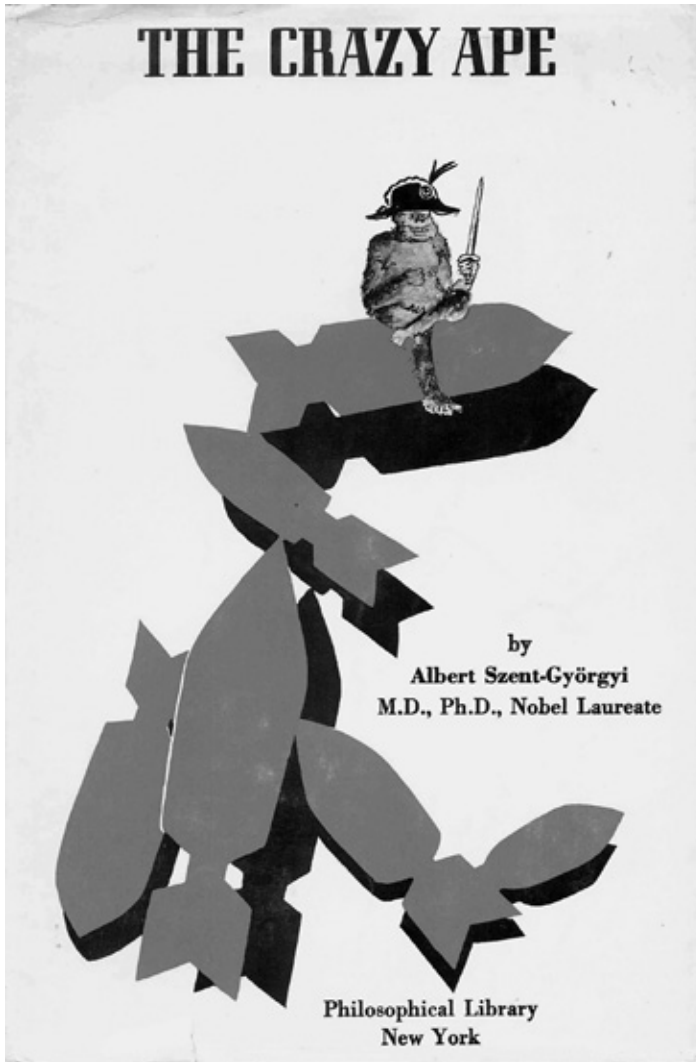
We cannot expect much from our present leaders: their sole aim is to gain or maintain power, i.e. to win the next elections; however, the situation is the same with the media serving the power or popular taste for money (for circulation) as well.

Szent-Györgyi's pessimism was further fuelled by the unjust peace concluding World War I which projected another forthcoming "burning of the world." As he saw it, the French could not treat the defeated properly. The peace treaties merely caused a shift from an armed war to an unarmed one. Germany and Hungary could not have been held solely responsible, responsibility lay in human nature and the ethics of today. "Our country was the biggest loser of the war" (2001:77). There is no way for reconciliation since two and a half million Hungarians were deprived of their right to self-determination, of their most basic rights as human beings in Romania. The revision of borders needs to be realised for permanent peace and tranquillity for the Danube countries. The state of opposing a war is not a state of not shooting, but a state of mutual trust, fairness and cooperation. (2001:37)

Nevertheless, the author believed in some kind of historical development. He opposed certain, not named, historians who were talking merely of recurring cycles; he assumed a direction in history that evoked the characteristics of a (Hegel's) spiral, in which, of course, there are recurring elements, but which, on the whole, advances forward (2001:39). In Szent-Györgyi's opinion, it is the Middle Ages, the constant negative example (2001:41, 43), compared to which any kind of development would be detectable. Unfortunately, the author had only very superficial or no information on the first millennium of European civilisation. The chastity belt women had to wear in certain situations, which was often referred to as *horribile dictu*, simply did not exist, and so, could have no hygienic consequences either. (There is no evidence for its use prior to the age of renaissance humanism; this was simply a tale made up by prejudiced "historians" of later ages.)

The development of the great historical processes, their main directions were not the results of intra-societal tensions, but the advancements of scientific and technical knowledge. An objective standard of advancement is the relationship between the human being and the world around him.

¹¹ Albert Szent-Györgyi, *The Crazy Ape. Written by a Biologist for the Young*. New York, Philosophical Library, 1970. 17.



The Crazy Ape

In this aspect, radical changes occurred in the past. Until the 18th century, man was a mere observer of nature. As a result of the evolution of empirical science, man became aware not only of the fact that “there is a physical order in the Universe” (2001:41), but also that scientists are not mere spectators of the powers of the Universe, but are able to seize and govern them. The story of man, as he wrote in *The Crazy Ape*,¹² or is composed by two parts, divided at

¹² Szent-Györgyi, i. m. 14–16.

the turn of the 19th and 20th centuries by the appearance of modern science. In the first period, our species lived in a world to which his senses were adapted over thousands of years. In the second, our species stepped into a world to which he was a complete stranger. In this world even the cosmic powers forming the universe are at man's disposal, powers that cannot be experienced by the senses (X-ray, electron, radioactivity, quantum, theory of relativity) and this situation, without being aware of the ethical responsibility, is extremely dangerous. Man is sitting on a "volcano." And this volcano will erupt if he does not learn the new method to control the new mechanism (2001:43).

The "eruption" of a war is preceded by a long process and its starting point is not the visible cease of diplomatic relations; its starting point hides deeper, in our instincts. The biologist explains the above-mentioned defect of collective ethics with the two most fundamental callings. Vertebrates, as opposed to insects, are necessarily selfish for the aims of self-preservation and procreation. The basic element of the nervous system is reflexive: it builds up of sensory and motor neurons. The human brain capable of automatism and, in case of humans, abstractions, is above the unconditional and conditional (acquired) reflexes. This developed brain offers two more possibilities for man: to create a connection between phenomena not directly connected otherwise, and to act in a way that cannot be explained by external impressions. It is able to create impressions and reflexes in a theoretical way (2001:47). In other words, it is not necessary to speak of the devil to deter one from killing or stealing. Earlier impressions are stored deeper in our subconscious: they shape our inhibitions, thoughts and acts. It is a natural instinct to kill; moreover, occasionally, it would be highly reasonable and logical to kill. Nevertheless, we do not kill, our "inhibiting reflexes do not allow such an act, let alone think of it" (2001:51). In the clash of logic (which is not a suitable tool to divert one from killing) and reflex, it is the latter one to surmount. Such inhibiting reflexes form the biological basis of individual ethics.

However, it can be stated that no such collective ethics exists at the level of humanity, there are no signs of one developing. Individuals formed groups and behave as groups with other, similar communities formed elsewhere. The cooperation of the different groups and societies cannot be based on contracts or logic (that would entail the defeat of the other party). It can be established exclusively on the grounds of "some kind of code of ethics, some kind of inhibiting reflexes." However, no such thing exists. "The creation of such a code, such reflexes would result in a revolution of ethics: the greatest revolution man has ever seen." (2001:57) As opposed to the previous one, at the level of society, it seems hopeless to reach our goal empirically because

war propaganda, which many people turn for their own good, and other factors make it impossible. No such revolution can be envisioned although every moment is calling for new dangers.

On facing this dilemma, Szent-Györgyi seems to accept, at least, psychologically, the conclusion of Kant's "Perpetual Peace," which is filled with doubt as well as encouragement. *Zum ewigen Frieden* was written at exactly the same time as the professor from Königsberg was discussing the conflict of the faculties. The former study with its addenda had a great impact on the Hungarian intelligentsia between the two world wars. The literary-political periodical entitled *Nyugat* [The West] also wrote about it. In 1918, Mihály Babits translated it and wrote a study full of subtle references entitled *Kant and Perpetual Peace*, which the contemporary Hungarian intellectual elite felt to be their own. In the subconscious of the biologist, Kant's ideas, as well as Babits's thoughts appeared: in his words, "... no matter how much we doubt the realization of perpetual peace, we are forced to allow for its (faint or distant) *possibility*. However, as long as this possibility exists, no matter how little and insignificant it may be, anyone expressing and claiming doubts regarding this possibility will inevitably weaken it, which is a sin against humanity hard to forgive."¹³



¹³ Babits: *Babits Mihály művei. Esszék és tanulmányok. Kant és az örök béke* (1918) [Works by Mihály Babits. Essays and Research Papers. Kant and Perpetual Peace (1918)]. Budapest, Szépirodalmi Könyvkiadó, 1978. I. 535–536.

In Szent-Györgyi's views, this *possibility* depends on the principles and qualities followed in the education of the young. A child is not bad inherently. He/She will become one principally by the failed approach of the adult society. Deep-rooted skills may develop only in childhood; therefore, we must strive to allow for the youngest generations' reception to the family and to institutionalised education in order for them to be able to culture the conception and universalization of a new ethical scale of values. Initially, a child must become aware of the fact that the sense of belonging to humanity is far more fundamental than membership of a group. "They must be persuaded that every nation is built up by honest, good-willed and peace-loving people; furthermore, that our most precious possession is human culture and civilisation and this common treasure is the fruit of all nation's peaceful work." (2001:61) War is the failure of culture. Culture is composed not only of technology and science, but also of arts. If a visitor from out of space, from a strange planet would arrive here, Szent-Györgyi would first take it to the Louvre. The appealing works of art exhibited, such as the Venus de Milo, tell us more about humanity than the torpedoes, poisonous gases and cannons do. (2001:93)

Children must adopt a scientific way of thinking. These future adults only this way can become the actual masters of the world transformed by natural sciences only this way. An unprejudiced, objective and scientific approach to problems may be the key to success. "In spite of all appearance, I can see the development and formation of a new cosmic spirit on the basis of human solidarity: the idea of a *cosmopolite*" (2001:91). A spirit which is built equally on culture, science and a supranational approach.

Szent-Györgyi remained faithful in his entire life to the fundamental principles expressed in this volume. He intended to base the possibility for a change and development opening naturally after the war on a pillar of three closely linked columns; the columns of natural sciences, of ethics and of arts and philosophy, referred by him collectively as humanity. Natural sciences create effective tools; however, their constructive or destructive use depends on our ethical values. The greatest danger lies in the time drift of these two areas. The relationship between natural sciences and humanity is defined by their common subject. The subject of natural sciences is man himself it intends to change. "A happier and more balanced world we can build only on the pillar of these three columns. Natural sciences and scientific thinking teach us how to find our way in and use the powers of the vast nature around us. Ethics teaches us to be able to live together and to use the powers of nature for good. Finally, Humanity teaches us to

fill this short and, in itself, insignificant life with beauty, substance and spiritual dignity.¹⁴

Struggles of a Cultural and Scientific Politician

The great transformation of the Hungarian intellectual life after World War II provided an excellent culture medium for Szent-Györgyi to “transplant” his theoretical principles and put them into practice. At full throttle and, owing to his Nobel Prize, with enormous influence, he was ready to participate in the reorganisation process. The politicians were more and more confident in him as he was consistently against Hitler. He was well-informed and acknowledged internationally in the era called “Coalition Times,” between 1945 and 1950. Besides his positions at the university and the Hungarian Academy of Sciences (the Academy), Szent-Györgyi became president of the National Public Education Council in 1945. He invited Sándor Sík, the famous professor and poet from Szeged, to become his vice-president. Szent-Györgyi was also formally requested to become honorary president of the Hungarian Soviet Cultural Society. Here, his first colleague was writer Lajos Zilahy. They co-edited the journal of the Society entitled “Irodalom és Tudomány” [Literature and Science], which had six issues between December 1945 and August 1946. This periodical, in its field, was exemplary in realising the spiritual unity of the two forms of consciousness.

For the Emancipation of Natural Sciences at the Hungarian Academy of Sciences

In the spring of 1945, the Hungarian Academy of Sciences, at the beginning of its re-organisation, had three sections. Besides Section I Linguistics and Literary Studies, and Section II Historical Studies, all fields of natural sciences were grouped in one third section under the name of Natural Sciences Section. This structure of sections was clearly not able to fulfil the needs of natural sciences that started to advance rapidly. One of his fights, Szent-Györgyi started for this very purpose.

Linguist János Melich, the Oldest Member of Section I convened the General Assembly of the Hungarian Academy of Sciences on 26 April 1945. As a result,

¹⁴ Albert Szent-Györgyi, *Természettudományos világnézet, morál és humanizmus* [Scientific Worldview, Ethics and Humanism], „Tudomány”, 1946. 97–102.

Archduke Joseph August of Austria, biologist Ferenc Orsós and historian and former Minister of Culture Bálint Hómann were fired. Szent-Györgyi vigorously objected to awarding Grand First Prize to Pathologist Ferenc Orsós who had investigated the date of the Katyn massacre for his political involvement. Meanwhile, for the 50 vacancies, 20 honorary and full members and 30 corresponding members were chosen. Piarist philosopher Gyula Kornis from Section II, who was both exiled and persecuted by the Nazis and the Communists likewise, was the temporary president and later, in May, was elected to be President.

Szent-Györgyi, in his speech, suggested that, except for the best thirty members (ten from each Section), everyone should resign, and the “Thirties” should present their proposals on the new ones. This idea was supported solely by Zoltán Bay, and so, the General Assembly rejected it. In response, both Szent-Györgyi and Bay submitted their resignation, which, however, the Presidium of the Academy did not accept.

On the Great Assembly of 28–30 May, both officers and academicians were elected. Kornis remained President, geologist Aladár Vendl (from Section III) became Vice-President, and Literary Historian Géza Voinovich (from Section I), Secretary General. Some of the new members were Gyula Illyés, Lajos Zilahy, József Turóczy-Trostler, Gyula Ortutay and Zoltán Kodály. Szent-Györgyi, along with the other Nobel Prize winner György Hevesi became honorary members. There were no substantial changes in the structure of the Academy, and natural sciences remained under-represented.

In June 1945, Szent-Györgyi, as a member of the Academy’s delegation, travelled to the Soviet Union, where he learnt the structure and operation of the Soviet Academy of Sciences, which must have been appealing to him.¹⁵ On arriving home, he wished to realise a new organisation. He wanted to establish “an internal, smaller academy with a Science Saving Committee of 50 members, which would be set up by 25 members of liberal arts and 25 members of natural sciences.”¹⁶ He recommended the former to be presided

¹⁵ Albert Szent-Györgyi, *Nyilatkozat moszkvai útról* [Statement on a journey to Moscow], Délmagyarország, 7 July 1945. (The Soviet model shall be realised in the Danube Basin, the academicians are outstanding scientists, they are in ministerial positions); *Szovjetországi utazásom benyomásai* [Impressions on My Travels to Soviet Russia], Szabad Nép, 2 August 1945.

¹⁶ Lóránt Tilkovszky, *A Magyar Tudományos Akadémia a felszabadulás után 1945–1948* [The Hungarian Academy of Sciences after Liberation 1945–1948]. In *A Magyar Tudományos Akadémia másfél évszázada 1825–1975* [One and a Half Centuries of the Hungarian Academy of Sciences 1825–1975]. Ed. Antal Vörös. Akadémiai Kiadó, Budapest, 1975. 347–361.

by historian Gyula Szekfű and the latter one by physicist Zoltán Bay. Szent-Györgyi proposed himself to become leader of the Committee.

Szent-Györgyi believed that the Academy could not remain (financially) an entirely independent institution. External powers shall be involved in order for science to receive more budgetary support. Therefore, he suggested that the Mathematical and Natural Sciences Section unite with the Hungarian National Scientific Council. With the support of the Hungarian government, Szent-Györgyi established an independent Academy of Natural Sciences and Minister of Culture Géza Teleky requested the President of the Hungarian Academy of Sciences to integrate it into the structure of the Academy. As a result, two equally strong academies would have been realised: an academy of liberal arts and one of natural sciences. The unity of the Academy could have been seen in the joint use of the buildings and the appointing of a joint president alternately from the two academies.

However, the Academy rejected this proposal, and wished to preserve its genuine unity and the old structure. Nevertheless, it conceded to the request of Section III, and raised the number of members, i.e. favoured the Section of Natural Sciences over Sections I and II. Furthermore, it proposed membership to the 20 representatives of the Academy of Natural Sciences who were not yet members of the Hungarian Academy of Sciences. With this solution, Szent-Györgyi was not satisfied. He resigned once more, and this time, his resignation was accepted. He turned to the government for support, and in his article entitled "*The Academy is Highly Responsible for the Disaster of Our Nation*" published in the daily paper of the Communist Party, "Szabad Nép,"¹⁷ he violently attacked the Academy, which initiated an action of libel against him.

In this aggravated situation, the new minister, poet and literary historian Dezső Keresztúri made a compromise sufficient to all (including the Reform Committee the Academy previously requested). This compromise was more victorious to Szent-Györgyi than to the Academy. The main points of this compromise were the followings:

Election of all members of the Academy of Natural Sciences to Section III.

Division of Section III into two: the Mathematical, Physical, Chemical and Technical Sciences shall form Section III; Biology and Medicine will form Section IV.

¹⁷ Szabad Nép, 6 December 1945. He called upon all academicians to resign, the same way as he did.

The total number of members in Sections I and II will be equal to the total number of members in Sections III and IV.

Szent-Györgyi was elected secondary President to President Zoltán Kodály.

On the Assembly of 22–28 July 1946, several of his former colleagues from Szeged became members of the Hungarian Academy of Sciences. Sándor Sík (Section I), István Bibó, Károly Kerényi (Section II), Győző Bruckner, Miklós Jancsó, Brunó Ferenc Straub, István Rusznyák, György Ivánovics and others. The Grand First Prize was awarded for 1945 (retroactively) to Frigyes Riesz, and for 1946 to Albert Szent-Györgyi.

What should the scientific institutional system be like?

Predecessors of Szent-Györgyi in this aspect were Immanuel Kant and Ortega y Gasset once more. They and their followers determined contemporary public thinking of the field. In order to increase the significance of scientific research, Szent-Györgyi used certain elements of their ideas. In *The Conflict of the Faculties* (1794–1798) Kant was writing about two classes. The higher and greater unit was formed by the faculties influenced by the government, which provided training programmes allowing for ruling over the people. The aim of the government with the Faculty of Theology was eternal salvation; with Law, the aim was the transfer of knowledge on civil, and with Medicine, that on physical well-being. These programmes were offered as “open lectures.” The other unit was a lot cheaper and independent from the government. It was free, there was no higher command. This unit was formed, on the one hand, by historical areas (classics, languages, natural history), and on the other hand, clear rational knowledge (Mathematics, Metaphysics, Philosophy). (It must be noted that in 1872, when the University of Cluj was re-opened, there was no Faculty of Theology opened due to religious diversity; instead, almost uniquely, a Faculty of Natural Sciences was founded.

In Ortega y Gasset’s views,¹⁸ a university shall primarily educate learned and well-trained professionals. The *world views* of the different disciplines shall be taught; i.e. general information on Physics, organic life, mankind, society and the universe. A university’s main task is not to educate scholars of a specified field, but students shall also learn about scientific research. The tendency of

¹⁸ Ortega y Gasset, *Az egyetem küldetése*, [Hungarian translation of The Mission of the University] (1930). In *Ész, élet, egzisztencia*. [Intelligence, Life, Existence] Ed. Cejtei–Dékány–Simon, Szeged, 1990.

the prevalence of ‘research’ at the university proved disastrous.¹⁹ However, culture, general contemporary problems, the spirit of the age shall (or should) be in the focus of attention. Culture is the system of ideas on which an age cultivates. Today, culture draws mostly on science. People believe mostly in science. The greater and most decisive element of an age is culture which is able to embrace and simplify knowledge, and which also extracts from science whatever it may need. Only talented students growing from the ‘humus’ of the university shall be offered the possibility of scientific research.

In the Special Collection of Social Theory at the Klebelsberg Library of the University of Szeged, under notation 3435 there are two manuscripts written on a typewriter.²⁰ On both the date shown is December 1945. One of them is Szent-Györgyi’s mission statement, which was written in a spirit of reform, characterised by determined, unequivocal and sharp statements. The other is István Bibó’s reply to this paper. Political scientist and law professor Bibó reacted more delicately to the issues brought on in the mission statement, and in principle, did not share Szent-Györgyi’s views. This purely intellectual debate is kept from being personal. Bibó, with acknowledged respect though, contradicts his fellow professor.

His work, *Az egyetem, az akadémia és a tudomány válsága* [The Crisis of the University, the Academy and Science] begins with a statement: we are standing at the cross-roads of being and not-being. The old building has collapsed; we must now decide if we wanted to use some stones of the old buildings or not. There is no middle way, we need to say ‘yes’ or ‘no.’ An academic reform conception shall first clarify the social role of the university now in crisis.

A university was originally a society of scholars, and graduation from it did not give an entrance ticket to life. Universities used to guard their material and spiritual independence austerely. The crisis was the result of the sudden development of science and society in the middle of the 19th century. Until then, there were only one major and one minor science: Theology being the major, and Law and Philosophy being the minor. These programmes required no special tools. Consequently, empirical science needed a lot of society-funded money and so, the prestige of expertise grew. From then on, students did not attend universities to gain knowledge in general, but in order to learn the necessary skills to succeed in public life. However, science cannot be taught in masses. In such a way,

¹⁹ Ortega y Gasset, i.m. 329.

²⁰ András Lengyel, *Bibó és Szent-Györgyi vitája a tudományos intézményrendszer válságáról*. [A dispute on the Crisis of the Scientific Institutional System between Bibó and Szent-Györgyi] In, *Utak és csapdák*. Tekintet, Budapest, 1994. 281–292.

it will die (as there are no flowers growing in the middle of the highway) (2). Research fails because of compulsory school attendance. The professors must adapt themselves to the political streamlines, and striving to keep their respect, they join political parties. In his opinion, a university is a mass producer of public life. Students need to gain marketable knowledge, not “science.”

This situation is unsatisfactory to everyone: students are burdened with knowledge they do not need; teacher candidates who wish to teach the parts of a flower in an interesting way to children must study Algology for three years. Even scholars are losing ground, are unable to find their place in a university which turned into a “tomb of researchers.” He said the following: “If I allocate 25 per cent of what little I earn for shouting from the teacher’s desk one to two hours on a daily basis, 10 per cent for faculty meetings and 20 per cent for administration and the copying of invoices, the amount left is not enough for anything...” (4)

The situation is similar in the case of the Academy. Earlier, scholars used to unite in societies to share and discuss their experiences. Today, this is the task of the professional journals. “Public debate is pointless. During my long scientific career, I have participated in all important congresses. However, I have not seen any useful debates.” (3)

The Hungarian Academy of Sciences was initially established for the Hungarian language reform, and this battle was won. To the question, “Who is predestined to lead and organise science?” Szent-Györgyi gives the following answer: “a body: an assembly or real scholars, real scholars who represent living science.” (5) This society of scholars shall be set up. The university is the place of education, the Academy (on the basis of the Soviet model) is the place of research. A real professor is a scholar as well: as a teacher, he belongs to the university, as a researcher, to the Academy.

Bibó, partly with reference to Ortega, rejects this entire concept. In his words, “Professor Szentgyörgyi [sic!] provides a simple solution to this crisis: a university shall give up its great demands and admit honestly that it teaches the mastering of a trade and not science...” (1). In Bibó’s views, scientific research must not be taken from the university. Preferably, a college faculty should be established along with the university faculty to provide vocational training. Bibó intended a different role for the Academy than Szent-Györgyi. Bibó thought its major task would be the identification and efficient representation of *values*. With the “abolishment” of the church, there evolved no organisation that would be able to fulfil this important role in Europe. The Academy became a forum, and so, through its intellectual respect, it could represent pluralistic, multi-centred systems of values. As a team, it could embrace the different (intellectual) efforts. It is typical of Szent-Györgyi to compare a member

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az egyetem, az akadémiák és a tudomány világa.

Szent-Györgyi Albert.

A. B. J. kezirattal

A különböző korok léteznek intézményeket, melyekkel az intézményeket kielégítik. A intézmények váltakoznak, az intézmények megmaradnak; változatlanul tartja őket a dolgok természetesen tohatatlansága és a hosszuk kapcsolódó egyének, személyek érdeke. Ilyesmi rendszeren nem szokott nagyobb bajt okozni és az intézmények hosszabb-rövidebb hadoklással kimaradnak. Vannak azonban korok, mikor a sora a lét vagy nemlét kérdését teszi föl egy nemzetnek, amikor minden kérdésre tisztán, világosan, igaznak vagy nemnek kell felelni. Ilyen kort élünk ma is. A mi nemzetünk épülete összeomlott, és újat kell építenünk. Egy régi épület megtöretését lütyügő téglákat, egy újat nem lehet orral megdeni, s ha a régi épületünk egy kővét kőbe vesszük, azt kérdjük: hogy az építéssel felhasználjuk-e, tisztán kell felelnünk: vagy felhasználjuk, vagy elvetjük, kővégtat nincs.

az egyetem a tizenharmadik százal körül keletkezett. Eredetileg nem volt más, mint tudós emberek társasága. Ezek körül gyűltek azok, akik a tudományból meríteni kívántak. Ha eleget merítették, hasmentek. az egyetem nem adott se jogot, se diplomát, amely belépőjeggyel szolgálhatott volna az életbe. az egyetemenak maguk pedig szigorúan őristék magyagi és orvosi scolleni függetlenségüket. A válságot az egyetem életében az a hirtelen fejlődés okozta, amely a kult százal második felében egy a tudomány, mint a társadalmi életben beállott. A hatvanas évekig tulajdonképen csak egy tudomány volt, a theologia, két mellék-tudományával a joggal és a filozófiával. Ekkor nem kellett más, csak egy szoba és asztalok. A "teremtés" ki is fejezi a helyzetet. az a helyzet a természettudományok előretörésével hirtelen megváltozott. Nagy laboru-