Bulgarian teachers and scholars around Liberation

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Abstract: The biographies of the generation of Bulgarian teachers who lived and worked in the period before and after the Bulgarian Uprising of 1876 and the Russo-Turkish Liberation War (1877 – 1878) are very instructive. These biographies throw much light on the development of the education and science during the Bulgarian Revival and the establishment of the new Bulgarian state after five centuries of Ottoman occupation [2], [3]. Amazing are the efforts of the Bulgarian teachers in introducing European models, strategies, programs and structures in education [4-9, 24]. Reviewing the activities of six Bulgarian teachers we attempt to describe and analyze the difficulties in the transition from Oriental to West-European culture in the Bulgarian society at that time. We are focusing on Bulgarian teachers and scholars in natural sciences (physics and mathematics) and languages who contributed substantially for the establishing of West-European educational programs and related textbooks and materials. The names of the six teachers are: Ioakim Gruev, Ivan Gyuzelev, Todor Ikonomov, Georgi Ya. Kirkov, Nestor Marcoff and Todor N. Shishkov.

Keywords: history of education in Bulgaria, Bulgarian phys-math teachers, evolution of Bulgarian revival process (in education), Ioakim Gruev, Ivan Gyuzelev, Todor Ikonomov, Georgi Y. Kirkov, Nestor Markov, Todor N. Shishkov

1 Introduction

The biographies of the generation of Bulgarian teachers who lived and worked in the period around the Russian-Turkish liberation war (1877 – 1878), say between 1860 and 1900, are very useful for understanding the development of the education and science during the Bulgarian revival and establishment of the new Bulgarian state after five centuries of Ottoman occupation [2, 15]. We present below briefly some biographical data of six Bulgarian teachers and scholars in languages and science, such as physics and mathematics, who contributed substantially for the establishing of West-European educational programs, textbooks and materials [10, 13]. The names of the teachers we chose are: Ioakim Gruev, Ivan Gyuzelev, Todor Ikonomov, Georgi Ya. Kirkov, Nestor Marcoff and Todor N. Shishkov.

Ioakim Gruev (1828 – 1912) was born in Koprivshtitsa. He studied Bulgarian school in Koprivshtitsa, and a Greek school in Plovdiv. He taught in his native town (1848 – 1856). Later on, he headed the Central

Eparchial School in Plovdiv, considered to be the best of its kind at the time (1856 – 1868). There, he introduced Turkish and Greek languages. He is one of initiators to celebrate May 24 as the Day of Bulgarian Letters and Enlightenment. Ioakim Gruev was a chairman of the city council of Plovdiv (1871 – 1872), and Turkish commissioner in Haskovo (1875). He took part in the fight for the restoration of the autonomous Bulgarian church. Following the establishment of Bulgarian Exarchate, he became a member of the eparchial council in Plovdiv. During the April uprising, he was arrested. After the liberation war Gruev was chair of the Judicial Council in Eastern Rumelia, head of the department of education (1879 – 1884), counseling member of the High Administrative Court, and a high school headmaster. Gruev was co-founder of Plovdiv's Scientific-Literary Society. Since 1884, he was a member of the Bulgarian Literary Society. Gruev's more important works are nine textbooks, and five books [4, 5].

Todor Nikolov Shishkov (1833 – 1896) was born in Tarnovo. He studied at the class school in Elena and taught in Kilifarevo (1848 – 1849). He was a teacher in Tarnovo (1851 – 1852) and Stara Zagora (1856 – 1861). Shishkov studied literature at the Sorbonne and College de France, listened to lectures in Slavic studies in Prague (1866). Served as a correspondent of Kolokol newspaper. Following his return in Bulgaria, he became a teacher of English and Bulgarian languages, physics and arithmetic in Sliven, Gorna Oryahovitsa and Tarnovo. Chairman of the board of the Tarnovo community center, where he also read lectures and took part in the city's theatrical life. From 1871 till 1873, he was a teacher and manager of the Bulgarian school in Fener district in Istanbul. After the liberation, he was a teacher in Gabrovo and Varna, the chief of the staff of Varna governor (1879), a prosecutor in Shumen, a chief magistrate of the Shumen and Svishtov district courts, an inspector of the Svishtov educational district (1881 – 1885). He was a teacher at the secondary schools in Gabrovo, Russe and Varna; contributor to several newspapers and magazines, and author of five textbooks and two dramatic plays [23].

Nestor Marcoff (1836 – 1916) became a teacher in his native village of Krivo Pole, district of Haskovo when he was twenty years old. He continued his studies in Haskovo and took up teaching again, this time in Harmanli, where he enjoyed the love and respect of both his students and the townspeople. He was the first to declare war on the grecophiles, which almost cost his life. Markov was libeled by the local grecophiles that he ordered students to march, sing rebellious songs, and incited the students against the authorities. The grecophiles hired murderers, but Markov managed to escape them. Markov was arrested and brougth to court, but later was released following the active defense of the Haskovo citizens. Nevertheless, he was banned from teaching within the Edirne vilayet. Thanks to a letter of recommendation by Joakim Gruev, Nestor

Marcoff was appointed a senior teacher at the Pleven school in 1867. He translated the French textbook [16] on geometry and physics and compiled the first collection of mathematical problems for Bulgarian schools [17]. N. Markov's contribution in the sphere of lexicography is considerable. For the first editions of his French-Bulgarian and Bulgarian-French dictionaries in 1894 and 1898 [18], he was awarded the honorary title "Knight of Education" of the French Ministry of education and arts. Editions of Markov's dictionaries were published long after his death [19, 20].

Todor Ikonomov (1838 – 1892 was born in Zheravna (Sliven district). He studied in his native town, Razgrad, Russe and Sofia. In 1861, he became teacher in Tsarigrad. In 1865, he studies the Theological academy in Kiev. After finishing study, he became a teacher in Shumen (1865 – 1869) and Tulcha (1869 – 1871). Ikonomov produced many texbooks, such as "Bukvar's" and Bulgarian grammar textbooks (1867, 1868, 1875, 1886, 1891). He published an arithmetic textbook [9].

Ivan Gyuzelev (1844 – 1916) was born in Gabrovo. He studied in his native town. He enrolled at the Herson seminary in Odessa as a scholarship student of the Russian Holy Synod (1860). He graduated in 1867 and continued his education at the Faculty of Physics and Mathematics of the New-Russian University in Odessa. Upon completion of his studies (1871), he returned to Gabrovo as a teacher in physics and mathematics. Gyuzelev initiated the raising of funds to equipment of the school laboratory in physics in Bulgaria. He co-authored the program of the Gabrovo secondary school, titled "*Rulebook for the Students of the Gabrovo School*". He opened the so called Popular University and a theater at the community center. During the April Uprising, he was arrested. After the Liberation Gyuzelev settled to Sofia as the right-hand man of Marin Drinov in the organization of school afiairs. He was a deputy in the Constituent Assembly and secretary of the Assembly, the minister of education (March-November 1880), and the chairman of the Supreme Chamber of Accounts (1880 – 1894). He was a member of Plovdivs Scientific-Literary Society (1884). He was decorated by the St. Alexander medal, degrees fifth (1888), fourth (1889) and third (1900). Gyuzelev wrote six textbooks [6, 7], and some scientific papers [8].

Georgi Yakovlev Kirkov (1848 – 1929) was born in Pleven. He studied physics and mathematics in Russia, and was a teacher in Simferopol from 1868 untill 1878. After the war, he returned to Bulgaria. He headed consecutively: National Cartographical Institute, State Printing House, and National library. He was one of the first Bulgarian scholars in cartography, galvanoplastics and mathematics. He published a book on geometric algebra [14]. Kirkov wrote the first biography of Vasil Levski, who is a Bulgarian revolutionary and national hero.

2 Modelling elements of the revival process

Below, we study some statistical data related to Bulgarian revival. More specifically, we consider litteracy statistical data from [3, 23]. Following a modeling approach from enzyme kinetics [1, 22, 24], we use logistic functions to approximate statistical data as presented in Table 1. As a result we obtain explicit expressions for the time-course evolution of the studied processes as follows.

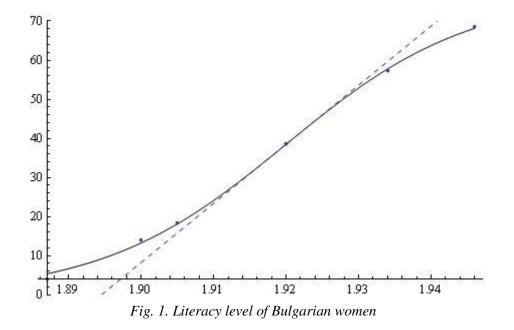Time course evolution of literacy of Bulgarian women, cf. Fig.1:

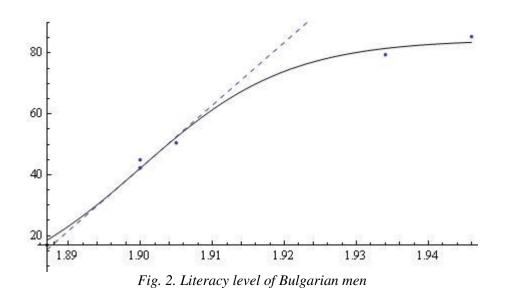$$V(t) = \frac{77.0068}{1 + e^{-78.4928(t-1.92)}}$$

Time course evolution of literacy of Bulgarian men, cf. Fig. 2:

$$V(t) = \frac{84.4701}{1 + e^{-97.9071(t-1.9)}}$$

Year	Male With children	Female With children	Male Without children	Female Without children
1887	10,71	14,50	17,00	4,12
1900	23,87	29,81	44,96	13,97
1905	27,90	34,75	50,57	18,24
1910	33,50			
1934	55,60	68,40	79,60	57,20
1946	77,01		85,51	68,56

Tab. 1. Level of litteracy in Bulgaria (%)

Fig. 1. Literacy level of Bulgarian women
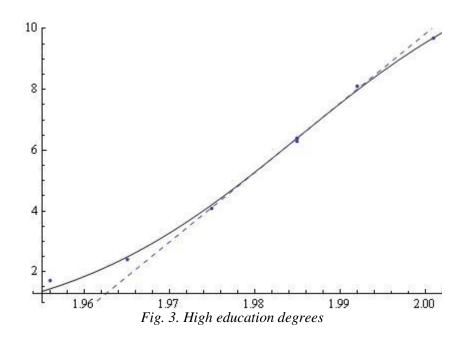
Fig. 2. Literacy level of Bulgarian men

Statistical data for educational degrees of seven and more years old Bulgarian population during the period 1956 – 2001 are presented in Table 2.

Year	University	High School	Secondary School	Primary School	Pendent
1956	1,7	8,9	24,9	36,5	28,1
1965	2,4	12,3	32,0	31,7	21,5
1975	4,1	20,08	34,2	26,7	14,2
1985	6,3	30,7	32,7	21,2	9,1
1992	8,1	37,7	31,0	16,1	7,1
2001	9,7	42,7	27,3	12,04	7,9

Tab. 2. Scientific degree (1956 – 2001)

Fig. 3. High education degrees

Time course evolution of high-level education (relative) is presented in Fig. 3:

$$V(t) = \frac{12.818}{1 + e^{-71.1539(t-1.985)}}$$

Having in mind the biochemical mechanism behind the class of logistic functions, cf. [25], we may conclude that there are two stages of the evolution process, namely:

Stage 1. Transition to nationalism (leading to formation of infratructure, including Bulgarian state);
Stage 2. Evolution of the Bulgarian educational process.

3 Conclusion

Hypothesis: There are two stages in the time-course evolution of the Bulgarian revival process

– Transition (of intellectuals) to nationalism [15];
– Development of the Bulgarian educational infrastructure and personnel.

General conclusion

The application of mathematical modelling in the field of social processes necessarily focuses attention to the mechanism of the processes.

The lag phases of the growth curves may indicate transition or logistic evolution. Therefore, it is an open problem to study the above discussed models with respect to this practically important issue.

In particular, various reaction networks can be compared with respect to the form of their solutions and applicability to various growth (decay) real processes (Henri and Gomperz growth curves, for example).

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