THE CITY OF STEEL, THE AGE OF SILENCE
Problems of water and inaction in communist Hungary 1945–1990

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The major objective of this article is the unusual environmental history of water in East-Central Europe, through the case study of the northern Hungarian industrial centre of Miskolc. Hungary is situated in the Carpathian Basin, which is characterized by several tributaries of the Danube river having their sources in neighbouring countries. The high number of shared rivers combined with accelerating industrialisation after World War II have long caused numerous debates over water resources within and between states. It is astonishing, however, there has not yet been carried out a truly human-focused historical study on water in the region. However, numerous works have been written about the formation of environmental policy or the legal battle over certain environmental issues, such as the Gabčikovo-Nagymaros dam.

This article touches on different aspects of the water-related environmental problems, nearby and in the important industrial centre of Miskolc. Therefore, it provides a laboratory for understanding how environmental problems were perceived by some and were not perceived by others, why and how the discussion of the environment has formed in that region and in Central-East Europe in general. The case study concentrates on the water supply and sewage discharge problems of Miskolc from the end of World War II until the political changes of 1990. In Western Europe, these decades cover the time from a new way of recognition of environmental problems, through the creation of environment-related discourses, to the institutionalisation of environmental issues starting from the end of the 1980s. However it is important to recognize that in "Eastern Europe" the depleted environment did not become an issue of public discussion and was debated only by a fraction of the local society or the local intelligentsia until the 1980s. Astonishingly, this was not the outcome of central repression.

Theoretically this study draws mainly on sociology. The theoretical frame is set by combining and complementing Bourdieu's concepts of *habitus* and cultural and symbolic capital.[1] Bourdieu's influential ideas on *habitus* were developed to objectify the subjective, which has been one of the major paradoxes of human sciences. *Habitus* is the system of mental constitutions adopted through upbringing and education. On the individual level agents develop subjective categories of perception and action, and by those, respond to the objective conditions they experience. In other words, we might all see a tainted river nearby our home, but we see its importance in very different ways.

The centre of Miskolc from the observation tower of Avas Hill. Photo: Viktor Pal.

This embodies the objective social phenomenon into personal dispositions. Those dispositions are personal sets of tastes, which help us to choose from the menu of a restaurant for example.

If we accept, that *habitus* is the capacity to produce classifiable works and to differentiate these works by taste, a certain change of the environment has a meaning only for someone who possesses the cultural capital to decode those codes.[2] Cultural capital contains competencies, skills and qualifications which, in my understanding, are all various types of information. By possessing the appropriate information, one can not only judge the complex harmony of a glass of a Château Margaux or the sophisticated taste of the finest Hungarian goose liver, but can predict, recognize and understand certain changes in the environment, whether they be local, regional or global issues. Cultures are complex and richly layered systems which differentiate largely as to the ways of learning and the types of information we possess. Therefore one's cultural capital to understand environmental changes can spring from very different sources and that can be distributed very unequally between agents. However, the processes of perceiving and understanding are universal human phenomenon.

Habitus helps us to understand why social movements did not take place in Miskolc in the 1960–80s, when rapid environ-

mental degradation should have disturbed local citizens and provoked social action. As a rule, the presence of competing possibilities is bringing more and more issues into debate; therefore dominating groups have an interest in trying to set limits of heterodoxy, possibility for debate. At the same time other agents and agent groups are trying to act in the opposite direction, which opposes orthodoxy, the non-existence of competing possibilities.[3] Players of different historical periods and social structures have been naturally aiming to restore orthodoxy and to promote heterodoxy. However, the subjective levels of orthodoxy and heterodoxy have varied largely over the time and the globe. In case of Miskolc, it is also very significant how players were distributed in the game. Despite the inevitable fact of a serious environmental degradation of local water resources, only few joined the debate. Those were mainly technical experts, journalists and decision makers. Even in the 1980s, when the political atmosphere became increasingly liberal in Hungary, the folk of Miskolc remained silent. At the same time a strong and pressuring environmentally conscious opposition started to emerge in the country. Forming environmental movements in Hungary forced the government to delay a half-completed dam project on the Danube river in 1989, for example.[4]

Environmental movements are complex networks, and they are intimately interwoven with individual experiences. As stated above, people perceive the environment very subjectively depending on their age or sex, but especially on their *habitus*. Therefore one must ask, how actions taken in connection with environmental problems were related to human perception in the so-called communist countries, in this particular in Hungary, and why the perception of environmental problems did not led to the formation social movements until the early 1980s in Hungary.[5] And why it has never led even to a vital debate in the heavily polluted industrial centre of Miskolc? Finally one must re-examine the participants of that debate. How and what did they represent and why did they join the discourse?

Dreaming the City of Steel

In Hungary the majority of urban water supply and wastewater systems were established during the course of central plan industrialization after 1948. The priority of the construction of water supply pipelines and lagging sewage building was a common phenomenon in East-Central Europe throughout the communist period. Despite of the delayed creation of sewage pipes, urban and industrial effluent grew from 285,000 m^3 to 995,000 m^3, from 1945 to 1957.[6] In the 1950s, water supply systems were mainly constructed in the capital, Budapest, and in such industrial centres as Kazincbarcika, Komló, Tatabánya and Miskolc.

The city of Miskolc is situated in the northern industrial area of Hungary, and has a long history of industrial production starting from the 1770s. However, the accelerated development of local steel and engineering works began during the second half of the 19th century and peaked after World War II. The first water supply system of the town was constructed by 1913, because the town's 40,000 inhabitants were endangered by regular cholera epidemics and floods by the end of the 19th century. Water intake plants were established on karst resources, and an almost 40 km long water supply and sewage system, a water tank on top of the Avas Hill and a wastewater treatment plant served downtown and around 18 per cent of the total population.[7] Between the World Wars, only a modest development took place in connection with the water

supply system, and during World War II the waste water treatment plant and much of the network were destroyed. A new waste water treatment plant was not reconstructed until 1972.

The jeopardizing of water resources on a larger scale around Miskolc began with the war years. After 1939, and especially by 1941 when Hungary joined Germany in the war against the USSR, the steel factories of Miskolc gained national importance. Soon urbanization increased and accelerated and the town became the centre of northern Hungary and national steel and machine production by the early 1950s. A technological university was also established there, which reinforced the dominant position of Miskolc in heavy industrial production. However, infrastructural, especially water-related investments could not keep pace with the increasing demands of citizens and local industries. Already in the early 1950s clearly lagged behind needs at certain areas of the town. The original version of the first five-year plan, approved in 1949 for the whole nation, planned 10 per cent annual, and 63 per cent overall growth for the period, while the revised version of that plan predicted a 130 per cent growth for the whole five year period.[8] A centrally conducted industrial revolution began in the country during these years, in which Miskolc played a leading role. While the centrally planned economy of Hungary has been heavily criticised by historians from Hungary and abroad, its benignly naïve and anachronistic economic aims were to create one of the most advanced 20th-century economies.[9]

During the 1950s and 60s, Miskolc became the second largest industrial centre of Hungary after Budapest, the capital. Besides traditional steel mills, machine works and paper manufacturing, new branches of the processing industry such as glass, medical and alcohol manufacturing emerged. At the same time, water pipes were constructed and hydrants were set up in the suburban areas. The areas of Hejőcsaba, Martintelep and the Western outskirts were supplied by water, but no efforts were taken to build drains in these areas.[10] In addition to suburban sprawl, a territorial expansion emerged in 1945, which increased the local population to be served by potable water.[11] Citizens in these suburbs used brick waste water tanks, which polluted ground water on a widespread basis. Although the importance of sewage was emphasized in theory, the priority of water-related investments was building pipelines until the late 1980s. All in all, accelerated needs did not meet with amount of utilizable clean water resources. Shortage of water was a significant danger already in the 1950s, however, only a few paid attention. The annual report of the Miskolc City Waterworks warned city officials already in 1958, that water supply for new housing estates could be provided only with the installation of a new water intake plant. [12] Later on, the urgent need for new sewerages and a modern waste water plant was also emphasized regularly in the annual reports of the water works and official correspondence. However, at that time the construction area of new housing estates and the number of future residents were just about to rise.

Newspaper articles were warning the public of the future consequences of water problems already by the late 1950s.[13] Abundant water intake possibilities for Miskolc were the nearby flowing rivers of Sajó and Hernád. However, they entered the country carrying the pollution of Czechoslovakian industrial plants. In addition, the river Sajó ran through the heart of the northern Hungarian industrial region with various industrial activities such as steel mills, engineering and chemical plants and glass factories. Those complex problems should have been solved with the cooperation of various

This type of blocks of flats accomodate the majority of Miskolc's population. Photo: Viktor Pal.

groups locally, nationally and internationally. However, on a local level, the interaction of the water works with the communist city and borough councils was contradictory. Clean water resources, adequate water supply and sewerage system, and modern waste water treatment facilities were the priorities of the waterworks, but neither the company, nor the local administration had adequate financial resources. The local waterworks tried hard to lobby for its aims, but with only a limited success.

The formation of a scanty debate

After years in the making, problems of water supply came into the limelight in 1964. Due to extraordinarily dry weather conditions water levels dropped in the local karst wells. At the Tapolca water intake plant, which was one of the most important sources of clean water at that time, such limited water reserves had not been expected to be necessary before. This was because the karst springs reacted sensitively to extraordinary weather conditions. Those springs had their direct supply from the cave systems of the local limestone mountains. In times of abundant rain fall, karst water became abundant, and after a long dry period water level decreased quickly. On one hand a low quantity of water was available, on the other, the available amount was of high quality, because water was filtrated through the rocks, and naturally purified. The winter of 1963 was quite dry throughout Central Europe and frost came unusually early. Therefore the ground became frozen and did not let water flow into the limestone. In addition, March and April were unusually cold and the summer was dry again.

Since the water network of Miskolc was mainly based on karst resources at that time, a speedy solution was needed. During that summer the water shortage even worsened, and different projects and scientific conferences were set up in order to find a solution. Throughout the summer of 1964, around 30,000 inhabitants did not have access to safe tap water for about three months and even the county hospital had to delay surgeries for lack of water. Besides causing inconvenience, a lack of water endangered public health, because in some

of the suburbs people begin to use old and polluted wells. In some modern blocks of apartments top-floor citizens had to use the taps of their downstairs neighbours in order to get water.[14] As much as water problems might have encouraged social relationships in apartment block, the effects were undoubtedly ultimately negative. At the same time, industrial plants had to run on and they counted for 40–43 per cent of the total annual consumption of water in town.

Hydrant. Photo: Viktor Pal.

Journalists

News made for an important channel of communication between the waterworks and the public. Media in communist countries were often regarded as a highly censored; however, in the present case newspapers accommodated several diverse opinions in connection with water issues and created a forum for professionals and journalists to express their views on water. These articles were often critical towards water-related incidents and existing legal and administrational issues. It is astonishing, but the public has not joined the conversation in the form of reader's letters throughout the period. However, it is not clear whether this was a result of censorship or lack of motivation. All in all, one could imagine, based on the critical tone of newspaper articles, that reader's letters could have been published as well, if they had been sent.

After the terrible draught of 1964, an open debate over water related environmental and technical issues appeared increasingly often in local newspapers.[15] Besides public engineers and other water supply related experts, a number of journalists joined the debate, but citizen participation remained minor. The local media reacted quite sensitively to the worsening condition of local waterways and water resources throughout the period. This was rather related to the possibility of potential for sensation, than to "environmental sensitiveness". News had its value not only in capitalist societies, but in communist societies as well. Throughout the period researched newspaper articles were concentrated on certain types of issues in different time periods.

Clearly five such themes could be distinguished, which reflect key water-related problems of the time. Journalists and their readers were concerned about the escalating tap water prices after World War II and from the end of the 1980s. At that time major changes in the economy affected the

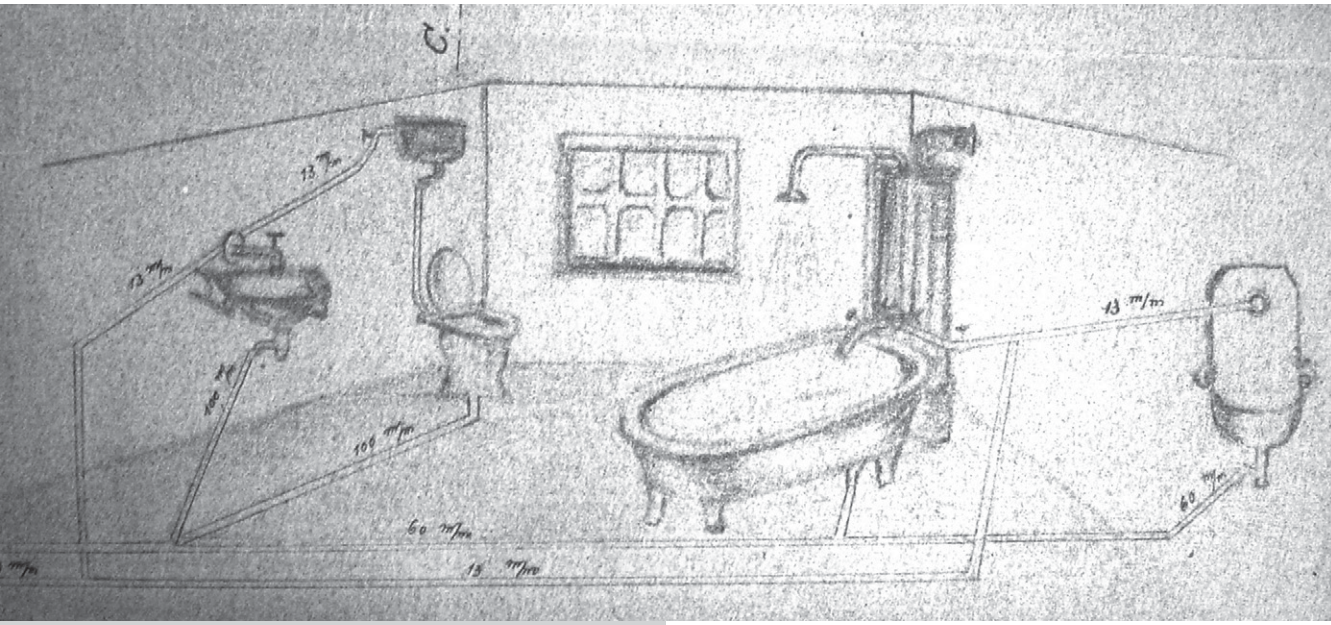
urban water supply as well.[16] During the early 1950s, when the country was forced into a flush of Stalinist victory for a few years, no articles were published on water-related problems. However, according to archival documents the first comprehensive water scarcity has emerged during the summer of 1951 and 1952. After the revolution of 1956, things have changed and several writings appeared in local newspapers, as well as in water-related journals.[17] Articles of that time were concentrating on the economic importance of water, and viewed the urban water supply and sanitation as a task of public engineering. News on the lack of appropriate water resources and the emerging water scarcity occasionally hit the front page by 1962. Insufficient supply inflated the value of water and water related news as well. Stories on the value of water regionally and globally appeared with a monthly frequency during the dry summers in the 1960s in Èszak-Magyarország, the popular daily of northern Hungary.

But no warning could have been effective without the change of the metering and pricing system itself.[18] The waterworks' rising intake costs were subsidized by the state to keep water prices low, since state subsidies on energy and water were indispensable for providing cheap services in the socialist welfare system, and was the fundament of both the American and communist dream.

Issues of urban water supply and the pollution of regional watercourses, however, were not only perceived as technological and economic problems by the news of the late 1960s. A new tone of journalism emerged focusing on the long-term investment perspectives in the region with an environmental flavour. One of these perspectives came from journalist Tibor Priska, who published numerous articles on urban pollution in local papers. In the article *Black Rivers* he writes: "What is a lot? And what is a little? The environmental fine, or building a waste water treatment plant? To build a waste water plant may cost millions [of Hungarian Forints][19], to pay the fine may cost not more than a hundred thousand. But the final damage will arise later, when water is used to irrigate lands, fish die out etc. What is more, this is happening each year." [20] But from where the information was acquired behind this news? Journalists represented an autonomous group in the discourse over water; most of their information was second-hand and came from hydrologists, each of whom viewed the problem in different ways.

Professionals

Another forum of professional discussion of water issues was created at local conferences and project meetings. They were set up irregularly from the end of the 1950s and produced even unpublished minutes. The possibilities of the construction of artesian wells, a gigantic 100 km long water pipe from the Tisza river and other plans were examined by engineers and hydrologists at those meetings.[21] The main aims of these studies were to find new water resources and to encourage city dwellers to consume less tap water. However, that was not an easy task, since karst water resources were already exploited and all water flows were heavily polluted in a 40 km radius. In reality, however, the water needs of industry still accounted for about 65 per cent of water needs in the region.[22] In addition the possibility of utilizing foreign experiences in case of water problems was increased. By the early 1970s, German and English experts examined the Sajó river, and Hungarian engineers made several journeys to West Germany and the UK. Even funding amounting to one million US dollars was awarded by the Development Programme of the United Nations for the Sajó project by 1972.[23] The first phase of the project



The blueprint of the ideal bathroom at the end of the 1950s. Photo: Viktor Pal.

was to learn about foreign experiences and to adopt monitoring and laboratory techniques. The models of the Thames and Lee rivers in England and the Ruhr in Germany were studied.

Miskolc Waterworks

Throughout the period, the priority of water related investments was the construction of water pipes. That was a common feature in most Central-East European countries throughout the research period. Even as late as in 1973, out of the total 19 million forint invested by the city waterworks, 9 million was directed toward new water pipes, 6.5 million toward construction and machinery, 2 million toward drains, 1.5 million toward pools and thermal baths and the rest half-million went to other expenses.[24] At first, the waterworks tried to carry out solutions with their own budget, with a limited result.

As a first response to water shortage the city council and waterworks aimed to open new karst water resources, but the rapid growth of the town outstripped the capacity of these water intake projects. An accelerated extraction of karst water resources was carried out, and even the thermal springs of the spa bath "Augusztus 20" and the spa baths of Tapolca were added to the system, which resulted in bath closures. In addition, a significant amount of drinking water was purchased from the Sajómenti Waterworks of Kazincbarcika, which raised prices significantly. Therefore a state subsidy was expected forthcoming from the National Hydrological Board (OVH). However, problems could not be solved anymore without governmental assistance.

Despite of the well-known oppressing features of the communist one-party system, the Hungarian plan economy was

sharply criticized in official documents issued by the Miskolc Waterworks as early as the late 1950s: "The problem is that our [pipe] construction capacity which was set [by the central plan] is not fulfilled for the whole year, because the orders from the city council do not exceed the annual volume. Therefore, we have asked for a decrease of our annual plan on July 11 1960, to which no response was received. Furthermore, we will not be able to keep the plan of 7800 million [Hungarian] forints[25] building value, because we can obtain neither the needed pipe materials, nor workers. Water pipes cannot be purchased in the remaining six months of the year. We will not be able to hire more workers because we do not have housing facilities for them."[26]

The director and the chief accountant of the city waterworks, László Szilléry and Zoltán Szűcs produced a number of critical and severely honest annual reports and correspondence from the end of the 1950s. However, when those jobs were hold down by the more class-conscious Dr Barna Konczvald, director, and Mr István Marek, chief accountant, the critical approach towards the existing conditions diminished fast. From that time, the correspondence and annual report of the local waterworks became markedly Stalinist, compared to those which were produced under the Stalinist era. Even in 1968, which was an unusual year economically reforms and the official introduction of partial market economy in Hungary, officials of the local waterworks were reporting about the employees communist activism and the successful "work race movement". However, at the same time flexible mechanism, the relationship between supply and demand became the major features of the market, instead of central plans, firms as buyers and sellers became independent on the market, which would have opened up new possibilities for water protection and supply. After all we can state that the management of Szilléry have had a more critical approach, better lobbying and general overview on water related issues. Therefore that management acquired more appropriate *habitus* to judge the long term development of water supply, than of Konczvald's a decade later.

During the 1970s, most technological and environmental questions in Miskolc concentrated on the construction of new water intake plants and problems of urban sewage discharge. In 1972, the expression of "environmental pollution" was written down for the first time in local official correspondence. From that time referring to "environmental problems" became more frequent, through occasionally it was used incoherently. Beside the formerly known technological and economic questions of pipeline construction and institutional water filter installation, new terms emerged for sewage discharge and pollution fines. Pollution fines were established in the Hungarian legal system as early as 1961, but they became frequently exercised in Miskolc only a decade later. The annual fines of the local waterworks were set by the regional water authority, as that was the next highest authority. However the waterworks of Miskolc exercised pollution fines itself as well, by the time monitoring was installed along Szinva creek and in its sewerage system.

The legal field of the debate contributed with presented new situations. According to the local water company's argument, the construction of wastewater was the responsibility of the city council of Miskolc. Therefore the waterworks could not be blamed for any delays and cancellations in construction of a new waste water plant. A plan was earlier carried out, however, in 1955, but it was not financed by the National Plan Office. According to the argument of Szilléry, they had no responsibility for delays and for water pollution after the plan was not financed by central authori-

ties. Later on in appealing that decision to the court the water company was requested to carry out the construction of the waste water treatment plan. However, this was impossible from the company's own resources, without the financial help provided by the state. According József Piukovics, the chief engineer and Dr Konczvald Barna, the director, this was clearly the government's responsibility. Furthermore, the 1/1961 governmental order of sewage discharges was not coordinated with the national apartment construction and development program nationwide. Even ÈVIZIG, the regional water authority, could not comply with its own orders to prevent further apartment constructions, until safe and abundant water resources are connected to the urban water supply system of Miskolc.[27] Building new housing estates with safe water supplies would only be possible, if a new water intake plant were installed and the construction of the new waste water treatment plant were carried out immediately. Finally, the construction of the new plant was announced on the April 26 1972, and the construction cost of 400,000,000 Hungarian forints[28] was financed by that time.

Regional and national authorities

On the other hand, according to the Northern Hungarian Regional Water Authority, beside those waters which ran trough the ruins of the old waste water plant, 10,000m^3 waste water flowed right into the Sajó trhough the József Attila street main collector each day. Another 16,000m^3 flowed into distribution tanks and a further 16,000m^3 to settling pans each day. The efficiency of the latter equipment was extremely low, being basically without results. Abstraction fines were set based a single monitoring of the river flows annually, before the installation of the monitoring system. However, imposing a fine on the water works had a minimal impact on the amount of untreated sewage in the short run, because investments which were needed to solve environmental problems could not be financed out of corporate budget, but had to be covered from governmental sources. Since the first sanctions for water pollution in 1/1961 governmental order, not much had been done to reduce the discharge of waste waters until the end of 1971. However, the total amount of the annually discharged waste water doubled during that 10 year period in Miskolc (6,740,428 m^3 – 15,330,000 m^3).

In the early 1970s the Miskolc waterworks began to prepare the prerequisites for the imposition of pollution fines. The first laboratory for examining on the quality of local water flows were set up in 1972 employing a full-time chemical engineer. Data-collection began on the activities of mayor polluters and in the mean time a new waste water treatment plan was finalized. When the local waterworks itself began to set discharge fines annually for some of the major polluters, many of them took steps to install mechanical was water filters preventing fat and other discharges. The debate over sewage discharges came into the end after the installation of the mechanic waste water plant. The new waste water plant provided only 30 per cent efficiency, but significant hazards on the environment or major technological issues to be solved were not discussed in local water forums anymore. This technological construction was adequate according to the information they possessed on the issue, which drives one back to the problems of *habitus* again.

Perhaps the installation of a new intake plant and the development of infrastructure contributed also to the end of the water debate. The first such investments was of the new well "No.II" at the Alsózsolca water intake plant with a 4,000 cubic metres daily intake in 1974. At the same time 9.5 per cent of the total water consumed was bought from the Borsod Regional Wa-

terworks through an intersystem pipeline. In addition, in February 1975 a new water intake plant on River Hernád began operations with a very significant intake capacity of around 15,000 cubic metres.

Economic Stagnation and the Peaceful 1980s

After the installation of new water intake plants, significant water supply and water quality problems were not perceived anymore in Miskolc. The above mentioned infrastructural and legal developments satisfied most actors' needs in connection with water supply and water protection. However, those developments meant solution for the general *habitus* of the time; further reasons were to be found in the political and economic changes of the 1980s. By the early 1980s the growth of local industrial output slowed down, which effected population growth and water intake as well. By the mid-1980s the economic stagnation of the country was inevitable for all living in Miskolc. The economic shock was on its way to come.

At the same time the opposition of the infamous Gabčikovo-Nagymaros governmental dam project was growing in Hungary, and was about to reach a new level of politicisation in the mid-1980s. Environmental protests in connection with the Gabčikovo challenged local and central political culture in Hungary. Movements created new meanings not only for their participants, but for the larger community. It is interesting, however, that on one hand, protestors were perceived as the opposite by the central government, on the other, the government's environmental policy was frequently criticised by the state-financed and "censored" media and water officials as well. That dam project was not only a dam; it was a symbol, which is why it aroused such strong feelings pro and contra. For the promoters of the project, the Czechoslovakian and the Hungarian regimes, and a share of their peoples, and for the Austrian banking and energy utility establishments, it was a symbol of progress and economic independence, for the opponents, Greens, a proportion of the Austrian, Hungarian, Czechoslovakian (Slovakian) society and some of the dissidents it was the symbol of communism.

Ownership, profile and production scales were changed along the Sajó river and the Szinva creek by the early 1990s. In Miskolc, heavy industrial production slowed down and virtually stopped by the mid-1990s. At the same time, the nearby chemical works of Kazincbarcika, Sajóbábony and Tiszaújváros were transformed and flourished with the help of foreign investment. Naturally, water quality of many water flows improved significantly, because of closing down major industrial plants throughout the country and in neighbouring states as well. After having medium quality sewer water, the Sajó river and the Szinva creek became good quality water flows with rich fish stock by the early 1990s.[29]

Conclusions

The perception of water related problems, the ways and levels of discussion and related technological issues in the northern Hungarian industrial centre of Miskolc were discussed in this article.

After steel mills and engineering factories were enlarged in Miskolc and water consumption increased radically, finding further water resources and discharging wastewaters became the two most important problems of participants of the water-related discursion. However, urban water supply needs were ranked below the needs of industry in the early 1950s; problems of

water scarcity and pollution peaked by the mid-1960s. At the same time an economic reform attempt abolished the central plan economy in 1968 and the foundations of a market economy were created. In the forums of water related debate only a minor fragment of the local intelligentsia expressed their points of view and beliefs. The majority of the local society lacked the required level of *habitus* to participate into that conversation.

Minor participation to discourse, a so-called "silence" or "inaction" could be observed throughout the research period, which was characterised by the limited impact of forums. That "silence" became even more evident throughout the 1980s, when other environmental issues, such as the Gabčikovo-Nagymaros dam became passionately debated in East-Central Europe, and has received attention on a global scale as well. Despite the serious water related environmental problems of Miskolc, the levels and the intensity of politicisation were low, and a minor group of city and state officials, engineers and journalists during the period observed.

Furthermore, that discourse did not pick up pace until in a very short time span of few years at the end of the 1980s and the beginning of the 1990s, as in other Central-East European environmental cases, such as the one referred above, but even that minor participation has diminished by the mid-1980s. It was possible because environmental issues were mending by the installation of a mechanic wastewater plant, new water intake plants and the decline of industrial output.

Therefore, it was not primarily political oppression that banned discourse over environmental issues in East-Central European countries, but it was certain environmental changes were not significant to most of these societies. The cultural competence to decode those codes was not present. Therefore they did not participate on debate over their future, which provides a new understanding on the history of environmental and technological changes and the recent past of East-Central Europe.

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[1] Pierre Bourdieu, Practical Reason, On the Theory of Action (Stanford University Press, 1998)

[2] Pierre Bourdieu, Distinction, A Social Critique of the Judgement of Taste (London and New York: Routledge & Kegan Paul, 1984), 170.

[3] Pierre Bourdieu, Outline of a Theory of Practice (Cambridge: Cambridge University Press, 1977), 169.

[4] John Fitzmaurice, Damming the Danube, Gabčikovo and the Post-Communist Politics in Europe (Boulder, Colorado: Westview Press), 94-95.

[5] The term "communist" might be misleading for the reader in the context of this article. Unlike many historians, I do not see the "communist regimes" as the main source of oppression in East-Central European countries during the research period. In my understanding that phenomenon was rather a result of a complex system of choices and decisions.

[6] László Szitkey, Szennyvízcsatornázásunk helyzete 1958. év végén[The state of the national sewerage construction in the end of 1958]. (Budapest: Országos Vizügyi Főigazgatóság [National Water Administration], 1959), 318.

[7] János Teslér & József Piukovics, A miskolci vízművek és fürdők 50 éves története, 1913-1963 [The History of the 50 year old Miskolc Waterworks, 1913-1963], (Miskolc: Miskolci Vízművek, 1963), 13.

[8] Gábor Révész, Perestroika in Eastern Europe, Hungary's economic transformation. (Boulder, Colorado: Westview, 1990), 33.

[9] Daniel Chirot described the Soviet system as the most advanced 19th century economy in the world in his 1991 book. Daniel Chirot, "What happened in Eastern Europe in 1989 ?" in Daniel Chirot ed. The Crisis of Leninism and the Decline of the Left (Seattle: University of Washington Press, 1991), 5.

[10] H.M, "200 százalékra teljesítik a hároméves tervet a miskolci Vízgazdálkodási Hivatal dolgozói,[The Central Plan is finalised by 200 per cent by the workers of the Water Administration of Miskolc]"

Észak-Magyarország (Miskolc) 2 October 1949, p. 9.

[11] The East-Central European suburbia is definitely different than of those in Western Europe. These mostly rural communities depended on mass transportation; dwellers subsidized their living from market gardens and earned their living in an agricultural collective or in city factories. However by the 1980s these communities became increasingly urbanised and lost their previous characters.

[12] "The annual report Miskolc Waterworks in 1958", Papers of Miskolc Waterworks (XXIX-113), Post World War II Branch Archive (Mezõcsát) of the Borsod-Abaúj-Zemplén County Archives, Miskolc (Hungary).

[13] Sz.M., "Tervek Miskolc ivó- és iparvízellátásának javitására – a csapadék és a szennyvízelvezetés megoldására,[Plans to improve the public and industrial water supply and to solve the problems of rain drainage and sewerage of Miskolc]" Észak-Magyarország (Miskolc) 24 April 1959, p. 2.

[14] Sándor Pozsonyi, "Ismét hiány lett a legerõsebb ital,[The strongest drink is in shorty supply again]" Észak-Magyarország (Miskolc) 24 April 1966, p. 5.

[15] Èszak Magyarország was the major newspaper in the region of Miskolc, however another daily, Déli Hírlap has appeared in 1969 and was published until recent years.

[16] Between 1945-1949 and 1987-1993.

[17] See Bibliography.

[18] Sándor Pozsonyi, "Az ivóvíz is érték - takarékoskodjunk vele!,[Tap water is a value as well – Save it!]" Észak-Magyarország (Miskolc) 28 April 1962, p. 2.

[19] See note 26 for further daily exchange details.

[20] Tibor Priska, "Fekete folyók,[Black rivers]" Észak-Magyarország (Miskolc) 13 March 1968, p. 5.

[21] "Miskolc vizellátásának komplex vizsgálata 1967. [The complex survey of the water supply of Miskolc]" (Unpublished conference minutes at the meeting of the Borsod Branch of the Hungarian Hydrological Society, 16 May 1967); "Nagy-Miskolc vizellátási problémái [The water supply problems of Greater Miskolc]" (Unpublished research reports by Viziterv Company, 1973); "Miskolc város ivó,- fürdő és iparvíz ellátásának hidrogeológiai adottságai, műszaki feladatai és gazdasági problémái [The hydro geological makings of Miskolc's tap-bath and industrial water supply, technological challenges and economic problems]" (Unpublished conference minutes at the meeting of the Borsod Branch of the Hungarian Hydrological Society, 28 November 1973).

[22] "The annual report Miskolc Waterworks in 1969", Papers of Miskolc Waterworks (XXIX-113), Post World War II Branch Archive (Mezőcsát) of the Borsod-Abaúj-Zemplén County Archives, Miskolc (Hungary).

[23] S.P. [Sándor Pozsonyi?], "Megmentik a Sajót,[They save RiverSajó]" Észak-Magyarország (Miskolc) 22 July 1972, p. 3.

[24] "The annual report Miskolc Waterworks in 1973" Papers of Miskolc Waterworks (XXIX-113), Post World War II Branch Archive (Mezőcsát) of the Borsod-Abaúj-Zemplén County Archives, Miskolc (Hungary). See note 26 for further daily exchange details.

[25] According to the official daily exchange rates of the Hungarian National Bank 11.74 HUF equalied to 1 USD on September 1 1960. More information is available on daily historical data at the database of the Hungarian National Bank on the internet: [http://english.mnb.hu/engine.aspx?page=arfolyamlekerdezes]

[26] "The annual report Miskolc Waterworks in 1960" Papers of Miskolc Waterworks (XXIX-113), Post World War II Branch Archive (Mezőcsát) of the Borsod-Abaúj-Zemplén County Archives, Miskolc (Hungary).

[27] Orders of the Regional Hydrological Supervisory: 7166/1966, to the Szentpéteri Kapu housing estate II-III stages, and 9291/1966 Bulgárföld housing estates. Papers of Miskolc Waterworks (XXIX-113), Post World War II Branch Archive (Mezőcsát) of the Borsod-Abaúj-Zemplén County Archives, Miskolc (Hungary).

[28] See note 26 for further daily exchange details.

[29] Anna Vári & Sándor Kisgyörgy, "Public participation in developing water quality legislation and regulation in Hungary," Water Policy 1 (1998) : 223-225.

BIBLIOGRAPHY :

Primary Sources:

Unpublished Materials:

"Miskolc város ivó,- fürdő és iparvíz ellátásának hidrogeológiai adottságai, műszaki feladatai és gazdasági problémái [The hydrogeological makings of Miskolc's tap-bath and infustrial water supply, technological challenges and economic problems]" (Unpublished conference minutes at the meeting of the Borsod Branch of the Hungarian Hydrological Society, 28 November 1973),

"Miskolc vizellátásának komplex vizsgálata 1967. [The complex survey of the water supply of Miskolc]" (Unpublished conference minutes at the meeting of the Borsod Branch of the Hungarian Hydrological Society, 16 May 1967),

"Nagy-Miskolc vizellátási problémái [The water supply problems of Greater Miskolc]" (Unpublished research reports by Viziterv Company, 1973),

Papers of Miskolc Waterworks (XXIX-113), Post World War II Branch Archive (Mezőcsát) of the Borsod-Abaúj-Zemplén County Archives, Miskolc (Hungary).

Published Materials:

Newspapers:
Déli Hírlap 1969-1990
Észak-Magyarország 1949-1990
Felvidéki Népszava 1945-1948

Journals
Borsodi Műszaki Élet 1958-1962
Borsodi Szemle 1958
Vizgazdálkodás 1965-1990

Literature:

BOURDIEU, Pierre. Practical Reason, On the Theory of Action, Stanford University Press, 1998.

BOURDIEU, Pierre. Distinction, A Social Critique of the Judgement of Taste. London and New York: Routledge & Kegan Paul, 1984.

BOURDIEU, Pierre. Outline of a Theory of Practice Cambridge: Cambridge University Press, 1977.

CHIROT, Daniel. "What happened in Eastern Europe in 1989?" in Chirot, Daniel ed. The Crisis of Leninism and the Decline of the Left. Seattle: University of Washington Press, 1991.

FITZMAURICE, John. Damming the Danube, Gabčikovo and the Post-Communist Politics in Europe Boulder, Colorado: Westview Press, 1998.

RÉVÉSZ, Gávor. Perestroika in Eastern Europe, Hungary's economic transformation. Boulder, Colorado: Westview, 1990.

SZITKEY, László. Szennyvízcsatornázásunk helyzete 1958. év végén [The state of the national sewerage construction in the end of 1958]. Budapest: Országos Vizügyi Főigazgatóság [National Water Administration], 1959.

TESLÉR, János & PIUKOVICS, József. A miskolci vízművek és fürdők 50 éves története, 1913-1963 [The History of the 50 year old Miskolc Waterworks, 1913-1963], Miskolc: Miskolci Vízművek, 1963.

VÁRI, Anna & KISGYÖRGY, Sándor. Public participation in developing water quality legislation and regulation in Hungary. Water Policy 1 (1998): 223-225.

Teräksen kaupunki, hiljaisuuden aika
Vesiongelmat ja niihin puuttumattomuus kommunistisessa Unkarissa 1945–1990

Victor Pal

Artikkeli käsittelee veteen liittyviä ympäristöongelmia unkarilaisessa Miskolcin teollisuuskaupungissa ja sen lähiympäristössä sekä sitä, miten niihin teknologian ja keskustelun tasolla suhtauduttiin. Tutkimus keskittyy Miskolcin vedenjakelu- ja viemäröintiongelmiin toisen maailmansodan lopusta 1990-luvun poliittisten muutosten aikaan. Tuona ajanjaksona Länsi-Euroopassa alettiin kiinnittää huomiota ympäristöongelmiin; ympäristöasiat nousivat julkiseen keskusteluun, ja ne institutionalisoituivat 1980-luvun lopulla. Itä-Euroopassa loppuun kulutettu ympäristö ei kuitenkaan noussut julkisen keskusteluun.

Kun terästehtaita ja konepajateollisuutta laajennettiin Miskolcissa ja veden kulutus kasvoi merkittävästi, uusien vesivarantojen löytäminen ja jätevesien viemäröinti olivat suurimpia ratkaistavia ongelmia. 1950-luvun alkupuolella teollisuuden tarpeet veden suhteen katsottiin tärkeämmiksi kuin kaupunkilaisten, ja vesipula ja saastuminen saavuttivat huippunsa 1960-luvun puoliväliin mennessä. Samoihin aikoihin tapahtunut talouden uudistusyritys poisti suunnitelmatalouden ja markkinatalouden perusta luotiin.

Veden saantiin ja jätevesiin liittyvistä ongelmista toi mielipiteensä esiin vain murto-osa paikallisen älymystön edustajista. Suurella enemmistöllä ei ollut edes kulttuurista valmiutta, *habitusta*, osallistua tämänkaltaiseen keskusteluun. Vaitiolo ja toimettomuus asian suhteen olivat leimallisia koko tutkitulle ajanjaksolle. Poliittinen painostus ei ollut tärkein tekijä siinä, miksi keskustelu ympäristöasioista jäi laimeaksi itäisen Keski-Euroopan maissa; ympäristönmuutoksia ei näissä maissa yleensäkään pidetty merkittävinä.