WORK CULTURE OF THE BATA COMPANY

M. Urbanová, J. Dundelová

Received: August 28, 2012

Abstract


The paper deals with the Thomas Bata Company from its establishment until 1932. After defining the concepts, methods and goals, the authors remind Bata’s trips to America, which were crucial for changes in the company. The text then focuses on the Bata’s organization of production based on the workshop autonomy system (Bata is often called the pioneer of self-government in industry). Bata’s production method, even if entirely original, represents an example of masterful adaptation of scientific knowledge in the field of production to the specific local conditions of life in town of Zlín. This paper is also a reminder of the Bata’s tragic death in 12th July 1932 – 80 years has passed since that date.

culture, work culture, Bata Shoe Company, the workshop autonomy system, self-government in industry, slogan “Service to the public”

1. AIM, MATERIAL AND METHODS

The aim of this paper is to describe and explain the work culture in the Bata Company during Bata’s leadership from 3rd April 1876 to 12th July 1932.

Tomáš Bata (in English Thomas Bata) came from the traditional way of work, thinking and life of Wallachian shoemakers that had been built for centuries and the new way of production (inspired by his trips to the USA in 1904–1905, 1911 and 1920) adapted to these specific local conditions.

Great importance for understanding the goals and methods of Thomas Bata has his articles and speeches published in the book Reflections and Speeches (1932).

This paper was based mainly on analysis of written sources using a comparative approach.

2. Definition of basic concepts

The Bata Company will be considered from the point of view of the concept of work culture. This approach allows us wider perspective for comparison, wider than talking only about the methods and organization of production. It is evident from the analysis of the concept “culture”. Culture is a product and expression of a specific social unit, and is also a condition from which the unit is developed.

The basic elements of culture can be divided into four groups:¹

1. Material productions (artefacts) – often referred to as material culture, including for example tools, products, art objects, symbols;
2. Social regulations – norms, values, behaviour patterns, rules;
3. Cognitive ideas – knowledge, technology, etc.
4. Institution organizing human behaviour – the authorities, social institutions.

The core of culture is considered to be complex behavioural patterns as a system of learned behaviour representing “way of life” of a company (or community).

¹ (Večeřa; Urbanová, 2006: 97)
traditions and so on. A summary of these elements can be called work culture.

The concept of work culture is very variable and not clearly defined. It contains the summary of views, behaviour patterns, value preferences, skills and legitimating processes in the area of work. Each work system has a specific work culture. Within the company several work cultures can exist and several work systems can have almost the same work culture. Work culture is an important factor for the work efficiency and it takes a long time to develop it into an adequate level in the work systems. Its stability then has a high value.

The fingerprint of work culture is evident in the work tools and work products; it is reflected in the prescribed work procedures and organizational systems, in self-regulation and in completion of partial tasks within the whole unit.

The immediate determinants of the work culture are work tasks, work conditions, workers, tools and material. These determinants lead into specific technology and work organization, they interact intensely for a long time, enforce mutual adaptation resulting in creation of a stable way of performing work with a certain internal logic (Gregor, 1984: 8–14).

3. From traditional to modern society

In the economic life of traditional society, whose elements Zlín had maintained until the second half of the 19th century, the market played a significantly different role than in modern society. In traditional societies, even the most developed ones, the trade served for a exchange of a relatively small part of products. A part of the products consumed in the houses of producers, as well as the labour and land as the dominant means of production of agrarian societies, was outside the market. Individual markets were relatively isolated. The basic principles of human behaviour were based on reciprocity, redistribution and autarky (self-sufficiency).

The transition from traditional to modern was very slow in the Zlín region, especially if we came from Karol Polanyi’s theory. According to this author the modern society is related to the influence of large machines on social life. K. Polanyi described this situation in his book The Great Transformation in 1944. It was just “The Great Transformation” that broke the traditional society. The core of the transformation according to K. Polanyi took place in the first half of the 19th century; in the Zlín region the changes occurred probably even later. The transformation was influenced mainly by the invention of the “big machines” that brought the change in the motivation of society members: the original motive – securing livelihood – was replaced by profit motive.

At the turn of the 19th to 20th century Zlín was a moderate craft and agricultural town in which industrial production was slowly taking roots. The city was located in the region of poor peasants and gladers in a very economically backward area.

The development of Zlín into an industrial city dates from the turn of the 19th to 20th century and was closely linked with the growth of the Bata Group. This manufacturing complex entirely uniquely influenced the development of the city and its surroundings. The city had a clearly defined and peculiar uniformity, a cosmopolitan face. It was a result of a high tech building production.

The regulatory plan for the town of eight-thousand people was created by Kotera in 1918. The enormous expansion of Zlín shows the increase of its population. In 1923 8000 inhabitants lived there, then in 1930 it was 22 thousands people, and in 1932 population of Zlín increased up to 26 thousands. Zlín definitively found itself in modern times. But let's return to the origins of the Bata Company.

4. The establishment of the Bata Company

The basis of the Bata Company was Antonín (in English Anthony) Bata’s shoe factory, founded in September 1894.

The first industrial and business experiences Anthony and Tomas Bata gained in the shoe factory of their father in town of Uherské Hradiště, which gave employment to 40–50 workers at the 1880’s. The workers were producing stitched, coarse-woollen footwear, a part of them worked at home. Anthony (1874–1965) – the older of the siblings – after completion of his apprenticeship, was devoted to a supervision of the production, while his younger brother Tomas (1876–1932) cared mainly about the marketing and business matters of his father's company. Apart from this Tomas Bata worked from time to time at his father request (when his father wanted him to verify the utility of a machine) also in the shoe factories in towns of Prostějov and Kroměříž. But after a quarrel with his father concerning the introduction of modern machines to manufacture, Tomas Bata founded with his brother Antonín and his sister Anna their own shoemaking workshop in Zlín.

In this shoe factory, where Thomas’ brother Anthony was registered as its owner, Bata continued in the tradition and produced exclusively Wallachian stitched, coarse-woollen footwear. The production was organized so that in the workshop components of footwear were cut and upper sides tailored, which were then passed to home-working workers and craftsmen living in Zlín and the surrounding areas, who completed them. This was the usual procedure of work in small shoe factories.

---

2 Zlín was for its rapid growth compared to Detroit or to Polish Gdynia. A model for the construction of Zlín was the idea of the English garden city of the industrialist Lever O. Candbury.
In less than a year the newly established company found itself in crisis, which was caused mainly by exclusive seasonal production of coarse-woollen footwear, which had no sales in summer months. The situation of the company improved in the autumn 1895, when the sale of the seasonal coarse-woollen footwear was increasing. In that time Thomas Bata assumed the control over the company because his brother Anthony was drafted into the military for three-year service.

In 1896 Bata introduces the production of new types of footwear, namely light canvas shoes. Orders for this lightweight and cheaper type of footwear were coming from Bohemia as well as and various cities of the Austro-Hungarian monarchy. An obstacle to more rapid development of production was relatively low level of technical equipment. At the end of 1896, the Bata factory had in service totally 10 sewing machines, 2 quilting machines and 1 cutting machine, but without mechanical drive. Production depended primarily on specialized manual work. To improve the production equipment, Bata left for Frankfurt in 1896.

Thomas Bata wrote about the results of his journey in his memoirs: I was impressed. I saw the machines to perform all the work of shoemaking, even the most imperceptible. But alas! All machines were only steam powered and I did not have any powered machines, and I did not dare to think of them. Also the prices of these machines were far beyond my means (Bata, 1932: 27).

After his return from Germany Thomas Bata paid attention to rationalization of production. He reorganized work operations with the aim to enhance the performance of workers. Revolution in the technical equipment of the Bata’s factory was an introduction of mechanically driven machines (using a steam engine of 8 HP output) in the new factory in 1900. With this revolution of thinking the way against the tide of centuries-old habits was open.

5. Bata's American experience

A huge turning point in the Bata’s thinking caused his trips to America, where he was three times (in 1904–1905, 1911 and in 1920). The first journey he took in December 1904. The main objective was to get acquainted with rationalizing methods of management, with technical equipment, organization of production and performance of workers in the local shoe factories. At that time it was something quite new and unusual to go America to acquire new knowledge and experience.

At the turn of the century the word America had a strange sound in Europe. It provoked images of mad speculations, quick getting rich and amazing adventures, whichever the fantasy can create. The crowds of emigrants were coming to America from the whole world; fraudsters, embezzlers and bankrupts tried to hide there to avoid the justice of their own countries. When news about Bata’s departure to America spread, there was uproar among his creditors. They did not want to believe that the young entrepreneur left for new experiences. They were convinced that the company bankrupted and T. Bata escaped. Several of them came for a meeting to Zlín, one of them was the director of the Olomouc branch office of a large financial institution; it was necessary to submit business books and appease the creditors (Bata, 1932: 31).

After his arrival to America in January 1905, Thomas Bata worked together with his three employees in shoe factories, mainly in the centre of the American shoe industry in Lynn, Massachusetts. After work they were meeting and sharing their experiences - today we might call this activity a kind of “industrial espionage”. All of them were surprised mainly by skillfulness of American workers whose productivity of work at some machines - due to strict specialization – was ten times higher than the productivity of comparable work in Europe in that time.

Therefore Bata was particularly surprised by the transition of a worker knowing the entire process of production to the worker, who – as a result of division of labour – is specialized in a single manufacturing operation.

About the machines, organization and skills he wrote in his memoirs: As far as the organisation of production and machines are concerned and I did not find much new in America. Machines were nothing new for me because I had been maintaining a lively written contact with American machine factories. Strange was only the placing of machines, which I had changed a few times during a year until I finally invented a way that also in America was considered the most time-proven. Skillfulness of workers, however, was enormous. They reached at some machines ten times higher productivity than our workers. That is why I worked as a worker in a factory, I was realizing that it is useless to say anything to people if you cannot show it. On the return journey via England and Germany I stopped in several factories and I worked there as a worker. In Primaneses - one of the largest factories - I polished heels. I barely started to work and my neighbours began to summon the other workers to come and look at the American fool. They thought that I worked very quickly, in the way - they believed - was not suitable for the proper worker. Workers in America did not admire me. There I was delayed far beyond my comrades. Good workers there polished 1200 pairs in the nine-hour working time. My best performance was only 500 pairs. In Germany, in the same system of machines, they produced only 100 pairs. And there was ten-hour working time (Bata, 1932: 290). That time in America the motto “time is money” was fully applied.

T. Bata solved the adverse effects of sale crisis in the footwear industry by his second trip to the USA (in 1911). He wanted to gain further insight into the deepening of rationalization in the factory. One of the measures that he introduced with the aim to increase the intensification of work, were employment contracts, which the Bata company was signing with labourers working at the machines. According to these contracts the company penalizes the workers if they had not reached the prescribed work production or if they made defective products. Before World War II the Bata Company took an important position among mechanical footwear
factories, not because of the size of the factory or the number of employees, but because of especially highly effective production.

Bata used First World War for the enlargement of the company, which in the time of war boom, grew up in a large combined super-company. The company acquired the biggest military orders and sharply increased the number of employees.

Economic crisis in newly established Czechoslovakia was then a part of the post-war crisis in Europe and the USA. As the most dangerous matter appeared the inflation, which achieved in Germany catastrophic dimensions and which affected all states established after the disintegration of Austria - Hungary. The Czechoslovak government decided to prevent the danger of inflation with the stabilization of the Czech crown in relation to the Swiss franc. The Finance Minister Dr. Karel Rasin managed the monetary policy so that from mid 1921 to mid 1922 the Czech crown rose from five Swiss centimes to eighteen. Unemployment worsened, the export fell by half and the domestic market was engulfed by a lack of purchasing power of inhabitants. The government was accused of deflationary policy. And at that time Thomas Bata made a decisive step to obtain money for industrial recovery. He at once discounted shoes by 50% on the 1st September 1922. As it could be expected, the Bata stores were besieged by crowds of customers. Sales reached a record high of 98,711 pairs of the discounted value of CZK 8.1 millions. The money Bata used for the recovery of his production. After averting that great danger Bata fully used all experiences from his journeys. In 1923 he introduces conveyor belts, the most serious technical and organizational rationalization equipment, inspiration for which he found in a moving circle in Ford's plants. Ford himself saw this ring in a Chicago slaughterhouse, where they used it for a long time without someone's notice, and he invented for this device the entire system of fluent work. Furthermore, Bata, following the example of F.W. Taylor – the founder of scientific system of management – conducted time and motion studies of individual work operations. These results he used for elimination of all uneconomic, impractical and unnecessary movements at work.

6. Batism

Bata never considered his method of production to be original; it is evident from the pro-Bata literature of that time. It is obvious that Bata lined the findings of Taylorism, Fayolisnu, Fordism and his experiences from US companies and he adapted these different work cultures to the traditional life in Zlín.

T. G. Masaryk must also have seen these roots, when he wrote in one of his letters to Bata: Although

we have different professions, we have something in common. Both of us learned a lot of things in America. And your company I can compare to some of the American ones (Message, 1927: 26). The fact that the company was tied with the place of its origin was also mentioned by Paul Devinat, who carried out the survey in Zlín on behalf of the International Labour Office in Geneva.

The system of Zlín depends on two moral factors: the personality of the leader, and special characters of the workers. The Bata's system carries the seal of his personality and is also locally determined. It is a work of man which was realistically adapted to a particular region and time. We cannot a priori guess what another person in another time could establish there (Devinat, undated: 8).


7. Bata's self-government workshops

The main basis for the Bata organization was the self-government of workshops and employees' participation in profit and loss. Participation in profits was not a new idea. It used to be used by American entrepreneurs who provided an annual participation in the profit of the whole company to their employees. Bata, however, sought such a share of the profits that he could help him to project self-government workshops. Bata tried to set up such a profit participation, which organically grew from the autonomy of the workshops. Assumptions for this project were following:

1. The calculation of the achieved profits has to be as quick as possible and it must be carried out weekly.
2. Everybody who is involved should have opportunity to calculate on their own their own profit participation.
3. The department in which the employee participates in the profits should be so small that it allows the employee to have a noticeable effect in it.

Autonomy of Bata's workshops was based on the division of the whole company into hundreds of separate departments; each with its own head, its own means and special workshop records. The operating tables were supposed to show an accurate and stable weekly overview of the assumptions and facts, because each performance of such a company cell was measured according to its production and financial assumptions and real achievements. The assumption of each of these units was prepared 26 weeks in advance. Weekly assumption was divided into daily assumptions that were mainly in the production monitored on hourly reports. All assumptions and results of accounting were posted on bulletin boards. Each department was buying

---

3 It is clearly summarized for example in Jandik (1938).
goods from its neighbour in the company and after processing it was immediately sold to the next workshop or department.

The quality of the product was strictly taking into account, the defective goods were returned. Autonomy of Bata's workshops enabled quality control throughout the process.

The budget assumption determined number of shoe pairs that were supposed to be made weekly, total production costs and incomes (from the price of produced shoes delivered to the store). The income contained also the profit of the unit, which was divided into two equal parts – for the company and for employees who had a decisive influence on the production of their unit. Income from profit determined a credit for a personal account with about 10% interest.

8. Organization of production of the Bata Company – Summary

Production of all kinds of shoes at the Bata Company was realized in the halls of a standard size 80 × 20 m. There were 2 complete workshops there, established for the production of 2,000 pairs of shoes a day. All workshops were equipped with the latest sets of shoe machinery, powered with electric motors. Production was carried out exactly according to the plans. Workers were provided with processed necessary material, which was prepared in similarly equipped workshops.

For the transport of semi-finished products within the workshop conveyors (carts) were used, equipped initially with a roller system and later with an automatic conveyor system. For transportation between the factory buildings carts, elevators, lifts and belt conveyors were used.

They shoes were made according to the smallest details based on many years of empirical experience, which were constantly innovated.

The experts of the capitalist rationalization of that time, e.g. as Paul Devin, claimed that for the Bata's system the most important thing was just daily planning which was a new element in the rationalization of work. The plan was based on the number of shoe pairs of each type that had to be produced in one day in one workshop (or more precisely in one basic technical unit).

According to the daily schedule individual sub-plans for all plants with the precious timetable were itemized, so that the worker coming to work in the morning found the material prepared for the whole workday. This organization fully used the time and energy of each worker, because the process of production in workshops was not delayed by an additional supplementing of missing material. The result was obvious in a particularly high productivity rates and in a shorter operative time needed for the production process. Bata's organization transformed leather into completed shoes in 2–3 days, whilst American companies needed for a production of shoes from 8 to 14 days.

The basic difference between the average factory of “American type" and Bata's system was following: In Bata company every particular workshop, whether making shoe soles or the whole shoes, formed a separate unit, a special company working according to its plan and on its own account, and its products were passed on by a special way of selling to a next production sector. (For example, the shoe soles workshop was selling soles to the ready-to-wear workshop, and the ready-to-wear workshop was selling complete shoes to the marketing department.) In contrast, in American factories the process of production of shoes formed indivisible unit usually concentrated in one compact factory.

Characteristics of Bata's system (These points are cited from the Bata's work order from 1923.):

1. The entrepreneur and his staff have common interests and must therefore live in a friendly relationship and mutual cooperation.
2. The company is not the owner's property. He is entrusted with the management. However, the company must serve to entrepreneurs, employees and customers.
3. Any intervention into the relationship between the employer and the employees undermines mutual cooperation and must be rejected. Any violation of this policy harms the public. The business should be interfered as little as possible.
Bata rejected any trade unions or political organizations within the workplace.
4. Each of the staff members is responsible for their happiness. Everyone is allowed in democracy to penetrate with their own effort and skills into a senior position. Bata wrote about this open opportunity:

The greatness of our era is in the availability of even the highest places in our country to a poor man; it's up to him, his abilities and his perseverance to achieve them (Bata, 193: 148).

Bata was well aware that no organization can guarantee the future for his company unless the old experienced employees share their experiences with the young ones. This principle had been very well understood already in the Middle Ages. Trade and commerce were organized in guilds accurately adjusted to education of young people.

---

4 These ideas are probably influenced by Bata's American experiences with American social development that proclaimed an open opportunity for all, pointed out self-made men and their staggering individual careers in which millionaires are products of natural selection, and where it was supposed that nobody is able to steal an unbounded prospect from a young man unless he steals it himself. In this spirit Bata's school of young men was also influenced."
T. Bata criticized big industrial companies of that time for not taking care of new young employees. (Even maintaining of low mental and physical standard of workers was considered as a benefit.) For establishment of Bata’s school for young Bata was certainly inspired with the “Work School of Henry Ford.”

9. Bata’s slogan “Service to the public”

Already during his first trip to the U.S. (1904–1905), Tomas Bata met the slogan “service to the public”, which played an important role in his business. The idea of “service to the public” he used, expanded and later it became the main motive of his business. Bata wrote about it in his memoirs: Some American entrepreneurs put their plants into the public service, they placed the prosperity of their customers and workers at the forefront. They won the hearts of all customers and employees that liked to serve the plant, which aimed to serve them. Workers receive higher wages, customers receive perfect products at the lowest price, and plants are expanding every day (Bata, 1932: 108–109).

In the American idea of service the connection of individual and general welfare is expressed. It’s basically a well-understood self-interest of people, who are in their businesses dependent on continuous and increasing customer’s willingness of purchasing.

The term “service” is of the religious, Protestant origin, and it is related to economical prosperity, because the Protestantism ordered puritans to care about their material prosperity. This concept of “service” in combination with other modern elements shows this term as compound of the Protestant public meaning of Bentham’s utilitarianism and dedication to a progress. It is a practical social morality, the effort of businessmen to acquire and retain customers, but it gives a semi-religious and semi-moral sanction to economic success. Production is organized from the point of view of the general welfare. The public is told that the wholesale and large-scale industry has its essence in the service to the public and not only in the owners’ profit. In the term “service” a good reputation and public favour is involved, which is an extremely valuable capital.

The public service is more important than profit. This, however, does not mean that entrepreneur abandons his profit. The profit is the result, the reward for good work, service, and if the service is really good, it certainly will come. To produce means to buy the material as cheap as possible, make objects from them at the lowest cost and then sell the products to the customers as cheap as possible. That is to meet the wishes of 95% of customers. That means that to produce something is not an exclusive activity, only a marketable one.

Thomas Bata said about the principles of the public service: This is a virtual principle of industry, commerce, and every human activity at all. It is in accordance with the laws of nature. In the nature, everything, that serves to life, supports it and grows, swells and reproduces. The companies that serve the best to the human society, are automatically supported by the public and people buy only the products of the most advantageous price and quality. The most capable people seek employment with companies that provide them with the greatest benefits and in return for these benefits they give the most effective work. The principle of public service is a measuring scale that everybody can use for their own most important decisions (Bata, 1932: 121).

According to Bata the entrepreneurs doing their business under this slogan play an important social function, they not only care for workers but they also work harder than their employees. These entrepreneurs work in their offices from 10 to 12 hours a day, and after reaching a certain success they do not find seclusion where they could rest and protect their business only with their influence, but they work even harder. New entrepreneurs are called organizers of labour, they call workers co-workers and all their actions are subordinated to the public service.

Bata himself wrote about this cooperation: The only possibility of mutual relationship between the employee and the employer within the company is only in perfect cooperation, carried out every day; that is the solution of the problem, how to use the modern production machines for the source of wealth (Bata 1936: 129).

10. Bata and changes in work culture

In a way of work at the Bata Company mainly these major changes could be observed:

1. Work task

Handmade production is replaced with machine production; production is not organized in terms of livelihood, but the main goal is profit.

2. Production means

There was a shift from underdeveloped hand tools to the latest machinery. Bata dreamt also about automatic machines.

3. Work Environment

The imperfect work was changed into the optimal working environment for that time.

4. Employees

From the worker mastering the entire production process became a specialist worker. The age is not already the privilege of knowledge and experience. The way is open especially to young people. The preparation of young workers is provided by the Bata’s School of Work.

---

5 Boys form 12 to 15 learned drawing, mathematics, big attention was devoted to sports. Pupils were encouraged to found new and better ways of working, to save part of their earnings from working in a factory and be able to buy shares.
5. Organization and management

Almost unplanned production turned into production planned in every detail. The decentralized production was replaced by centralized production using full capacity of workforce. The most advanced technical organization of the production process worldwide in the footwear industry was applied.

From the moments clarifying why Bata was successful in introducing a new work culture in Zlín, we can specify following:

1. Bata was aware that the people in the Zlín region as well as throughout Wallachia are used to work hard. Like a master was a model for his apprentice in previous ages, so Bata was expected to lead the staff, to show what is right and what is wrong.

2. Bata successfully continued in the local craft spirit, he emphasized craftsmanship and quality.

3. While introducing in Zlín the system of work typical for American large-scale companies he always adapted it to the local situation. For example he did not introduce shares that are common in American companies because he knew that local people are not accustomed to give money from their hands.

4. The personality of Thomas Bata - people believed him, liked him and admired him.

11. CONCLUSION

Bata was able to follow the craft tradition of footwear production in Zlín region and combine its components with his American experiences (e.g. intensity of labour, machinery, conveyor belts, housing, ideology).

Penetration of new work culture is associated with the demise of former craft small firms. City of Zlín changes significantly its appearance, which is determined by the development of plants. Aptly said, Bata transferred America to Wallachian hills. The situation of that time is illustrated also in interviews with eyewitnesses from 1985 that M. Urbanová found during her study stay in Zlín.

From these interviews we state: I appreciated Bata mostly for his technique and organization. Technique and organization was excellent for that time, it fully used skilfulness of people. Bata was able to choose very capable people and, with their help, he completed his experiences gained in the whole world, in Holland, Germany, America. That is in countries with very developed footwear industry, and Bata brought his machines from there.

Tomas Bata was very popular, hardworking and challenging to himself as well as to others. All employees were required to do quality work that was paid really well. The market gained not only quality but particularly affordable products at relatively low prices. He was able to predict the development - he was super forecaster. He had an excellent organization that was ahead of time. The slogan “Thinking for people, hard work for machines” is valid until today and we can still read it on the walls of the plant.

Although the current tradition of the Bata Company emphasis the maximum decentralization, the establishment of many small companies all over the world, some of the ideas remain. The Bata Shoe Company currently builds their businesses around the world. Employees are local people who may become potential customers. Bata shoes have kept their style, based primarily on good quality, certain visual solidity and they are determined to the broadest masses. In addition, entering the Bata stores anywhere in the world we can feel something of its history. The spirit of its founder is still present, although since his death 80 years have passed.

REFERENCES

DEVINAT, P.: Příklad racionalizace. Rukopis, Zlín, bez data.
HODAČ, Fr.: Tomáš Bata. Rukopis, Zlín, bez data.
JANDÍK, St., 1938: Železní tovaryši. Praha: Leichter.
Address

doc. Ph.Dr. Martina Urbanová, Ph.D., PhDr. Jana Dundelová, Ph.D., Ústav práva a humanitních věd, Mendelova univerzita v Brně, Zemědělská 1, 613 00 Brno, Česká republika, e-mail: martina.urban@seznam.cz, jana.dundelova@seznam.cz