

REVIEW

The Story of Jacob Bolotin (1888–1924), the First Blind Physician

Born in Chicago in 1888 to a family of Polish immigrants, Jacob Bolotin is a remarkable figure in the history of science. Despite being born completely blind and the many challenges he had to face in his youth, he managed to become a sought-after medical professional, an excellent pulmonologist, and the first blind physician in history. His story and activities remain highly inspirational today, as they convey a powerful message about the importance of an inclusive environment and the potential of people with low or no sight.

Historical background

There still exists a strong prejudice that limits the freedom of choice of people with low or no sight, who are still often considered incapable of pursuing a scientific career, and yet, the number of blind or partially sighted scientists throughout history is remarkable. From mathematicians such as Nicholas Saunderson (1682–1739), Leonhard Euler (1707–1783), and Abraham Nemeth (1918–2013) to pioneer road engineer John Metcalf (1717–1810) and entomologist François Huber (1750–1831), the often-neglected minority of people with low or no sight have provided extraordinary contributions to science and technology, opening new fields of research and providing concepts and tools that are still fundamental to our understanding of the universe or to our daily activities, such as infinite series, graphs, modern causeways building practices, and assistive technologies (Tattersall, 1992; Wilson, 1807; 1838; Kalinger, 2019; Mele & Sicignano, 2021; Hollier, 2015).

However, today the number of blind or visually impaired medical professionals is still surprisingly small, although recent decades have seen an encouraging trend. The first of them, born at the end of the 19th century, can still be regarded as a pioneering figure in the development of a more inclusive society, a man who, despite all odds, achieved his childhood dream, saved hundreds of lives, demonstrated the inconsistency of some persisting misconceptions, and opened new career paths for people with low or no sight through his example.

The story of Jacob Bolotin begins in Chicago, Illinois, one of the largest cities in the United States. It was founded in the second half of the 17th century and became a city in 1837 (Pierce, 2007a; 2007b). Its trademark neoclassical style buildings and geometrical road plant were completely swept away in the great fire of October 1871, a disaster which killed more than 300 people and destroyed or severely damaged 16,500 to 18,000 buildings (Lowe, 2012; Pierce, 2007c). The reconstruction of the city did not respect its previous aspect: between the late 19th and the early 20th century Chicago experienced chaotic growth at an impressive speed, with buildings of many different styles, modernist, liberty, rationalist, etc., and of very unusual forms (Miller, 1990). This means that, during the so-called belle-époque, the roads, particularly in the city centre, met, as they still do today, at unusual angles, diverging from crossings in a disorderly manner; not the best environment for a blind person to navigate.

Chicago continued to attract waves of immigrants, particularly people from central and eastern Europe, throughout the late 19th century, the period in which Jacob Bolotin's parents moved from Poland to the Windy City (Parot, 1971; Wilson, 2013; NFB, 2008).

Youth and education

Jacob Bolotin was born in Chicago on 3 January 1888, as the seventh and last son of Faga and Louis Bolotin. Notably, these two Polish immigrants of Jewish faith already had two blind children, Sarah and Fred, the fifth and the sixth born among their children, respectively. We do not know exactly why, but Jacob was born completely blind. Despite this circumstance, he soon showed signs of healthy stubbornness, of his courage, and joy of living. (Perlman, 2007)

Much of what is known about his life, especially about his childhood and youth, have been collected by Rosalind Perlman, a distant relative of his. As he learned to crawl, Jacob always found his way around the house, often deliberately bumping into objects to try to move them from his path, a detail that showed his strong character since his early years. He rapidly acquired familiarity with both Polish and English language and used to ask numerous questions from everyone about the most diverse subjects. He was so smart for his age that, at the age of four, he was admitted in school to the class of children aged five and six. However, due to a lack of funds, the public primary school he used to attend was not able

to support the blind child the way he needed, as there was no chance of hiring a Braille teacher or to print Braille books. Thus, his parents made the bold and inevitable move to send Jacob, along with Sarah and Fred, to the school for the blind in Jacksonville, more than 300 km from Chicago. (Perlman, 2007)

During the nine years he spent at this institution, Jacob became fluent in Braille and typing, as, at that time, many blind people used to be steered toward the profession of stenographer. He also learned to be independent and navigate around using a cane; however, at the end of the 19th century, this tool was just a one-piece wooden staff, not even painted white. (Perlman, 2010; New Jersey Council for the Blind, 2010) In 1901, at the age of 13, he returned to Chicago and, to help his family, began selling items door to door; starting with matches, he soon moved on to selling brushes. He used to navigate and move through the sprawling urban chaos of Chicago in an era when the first cars were starting to appear alongside horses and coaches. (Pierce, 2007c; NFB, 2008)

At some point during the nine years he spent in Jacksonville, he had contracted a respiratory disease and was very close to dying; luckily, he was saved by a sadly anonymous physician, who became his hero and convinced him that it was his vocation to help others. Despite his blindness, Jacob Bolotin decided that he would pursue a degree and become a physician, which is another reason why he started gathering money (Perlman, 2007).¹ He worked for some months for a company that used to make typewriters, becoming the company's representative outside of Illinois. With the sole support of his cane, he travelled throughout the United States to sell typewriters and collected enough money to study medicine at a school based in Chicago. Unfortunately, the school closed and Jacob needed a few more months of hard work to gather funds to enrol at Chicago College of Medicine and Surgery. (Wilson, 2013)

College years and the medical qualification

The first contacts with the Chicago College of Medicine and Surgery were not encouraging, as the director, Dr. Clutton, tried to convince Bolotin that it is impossible for a blind person to obtain a degree in medicine and become a medical professional. It was on this occasion that young Jacob pronounced one of his most famous sentences, a simple, yet incisive statement that rapidly became associated with his endeavors: "No one can stop me from trying." Eventually, he

convinced Dr. Clutton and enrolled in the college's first-year courses (Chicago College of Medicine and Surgery, 1912, p. 53; Perlman, 2007).¹ The director of the institution soon changed his mind, as he saw the young blind student progressing with excellent results, often obtaining the highest marks in many exams and quickly becoming one of the favorite students of Dr. William L. Copeland, professor of anatomy at the Chicago College of Medicine and Surgery (1913, p. 77).

Bolotin's best friend in those years was Herman Friedman, a son of Polish immigrants, who enrolled in the same degree course as Jacob. They used to study in a little room at the back of a tavern that Friedman's parents used to own in East Side, Chicago; Jacob used to help Herman with his English pronunciation, whilst Friedman used to read out to his blind friend and study companion. (Chicago College of Medicine and Surgery, 1912, p. 56; Perlman, 2007)

It appears evident that a blind person can learn theoretical concepts in medicine and associated subjects; however, especially at that time, it was very difficult for a person with low or no sight to get familiar with anatomy maps, the intricate diagrams that display the topology and functional aspects of systems and organs. Bolotin came up with a brilliant idea to solve this problem, an often underrated event in the history of science.

One night in January 1911, he came back home after an afternoon of studying with Herman Friedman. It was a Friday and his mother, a fervent Jew, was preparing food for the Shabbat. Whilst waiting, his mother gave him two little fabric samples. She wanted her son's opinion on which one was best for a dress she needed. It was holding those two little strips in his hands that Bolotin conceived a groundbreaking idea: he realized that his mother could reproduce anatomy maps in tactile form, associating each organ or tissue with a different fabric. This solution worked so well that he passed his exam with the highest mark. (Wilson, 2013)

On 1 April 1912, Jacob Bolotin obtained a degree in medicine with distinction and public praise by Dr. Clutton, who had completely let go his initial doubts and prejudice (Chicago College of Medicine and Surgery, 1913, p. 77). The news that a blind person had reached such a milestone spread rapidly, making headlines. This contributed to Bolotin's fame, but did not prevent the Illinois authorities from changing the laws, making it impossible for a person with low or no sight to sign up for the state exam for the final medical licence or qualification (*The Chicago Israelite*, 1912, p. 7; *The Chicago Record-Herald*, 1912,

p. 6). Eventually, thanks to Dr. Clutton's, Dr. Copeland's, and philanthropist Henry Lee Taft's intervention in the public press, the state reversed its decision after a few weeks, and Bolotin passed the exam and got his medical qualification, becoming the first blind person ever to obtain it (National Confederation of State Medical Examining and Licensing Board, 1912; NFB, 2013; *The Chicago Record-Herald*, 1912, p. 5).

Physician and activist

Clearly, even if he was not able to perform surgical operations, Bolotin could, thanks to his exceptionally developed senses, provide precise diagnoses. In the second half of 1912, he opened his first medical practice, but was forced to close it after only two months. The reason for this was that, despite the notoriety he had acquired, people did not trust a blind physician to take care of them and he received almost no clients. (Perlman, 2007; Wilson, 2013) The only person who turned to him was a young mother with a five-year-old daughter; the child was suffering for abdominal pain. Thanks to his well-trained sense of touch, Bolotin discovered that the cause was just appendicitis, but, after discovering the physician's blindness, the mother did not trust his diagnosis and rushed away with her daughter. The latter died two days later from resulting peritonitis. Bolotin's diagnosis was indeed correct, but prejudice killed the child. (Perlman, 2007)

Thus, with a degree in medicine and a medical qualification, after overcoming so many obstacles, Jacob Bolotin was forced to go back to sell brushes door to door to make a living (Perlman 2007). A powerful act of professional trust and a remarkable incident gave him the second chance he deserved. Dr. Adolph Van Tesleer, a renowned Chicago-based physician, had recognized Bolotin whilst they had briefly met on a stagecoach, but incredibly had a chance encounter a few hours later: just when Van Tesleer was wondering why the famous blind medical professional, who is featured in many newspaper and magazine articles, was touring the city to sell brushes, Bolotin knocked on his door, without knowing who was inside, to sell him his products. At that point, they had a proper conversation and Van Tesleer offered Bolotin a job as his assistant in his private clinic. (Perlman, 2007) Bolotin not only accepted but reacquired some optimism for the future, starting volunteering at Chicago sanatorium and other medical institutions (Wilson, 2013; NFB, 2008; 2013; Chicago Municipality Archive Registers, 1912–1920, B11 313–418; B12 9–366).

During the years 1913–1917, he took care of thousands of patients, saving hundreds of lives with his precise, unerring and quick diagnostics skills: his sense of touch was so well-trained and his hearing so subtle that he managed to detect all breathing problems, all pulmonary diseases known at that time, and often even cardiac disturbances (Wilson, 2013; Chicago Municipality Archive Registers, 1912–1920, B11 313–418; B12 9–366; Brown, 1924).

Bolotin's capabilities should not come as a surprise, as they were likely a result of brain plasticity—the ability of the human brain to readapt in particularly difficult conditions. It has been proven that, in people who are born blind or with significant visual impairment, the occipital cortex, the section of the brain which typically processes visual information from the eyes for transmission to the hypothalamus, is far from inactive. In fact, other sections of the brain, especially the ones related to other senses, create new and unexpected connections and patterns. For example, the occipital cortex has been shown to record activity during Braille reading, an action related to the sense of touch (Marins *et al.*, 2023). Thus, it does not seem unlikely that a blind person, who had dedicated his entire life to becoming a medical professional and had trained for years for this purpose, could deliver precise and effective diagnoses, compensating for the lack of sight through the development of other senses.

Bolotin's colleagues were so impressed by his skills and profound sense of duty that they started a petition to make him a permanent member of the public health system. However, once again, the State of Illinois showed a lack of confidence in Bolotin's expertise and refused to hire him (Perlman, 2007). His fame was so great that he ignored this last act of ableism and, at the age of 29, opened his new private medical practice at 732 N State Street, in central Chicago. The echo of the news of his many medical successes reverberated so widely that, as soon as he opened his new office, clients started to crowd in; they were so numerous that a newspaper article reported that the line of patients sometimes stretched from the second-floor entrance of his practice to the pavement outside the building (Kovalski, 1919; Wilson, 2013). A testament to his fame is the fact that when the United States Department of Defence printed a motivational booklet to be distributed to all soldiers in the First World War, a summary of Jacob Bolotin's inspirational life and activities was printed in this leaflet, alongside those of Thomas Edison and Jack London (Perlman, 2007).

After reaching the pinnacle of his career and having already married writer and journalist Helen Willens, Bolotin started advocating for the rights of people with low or no sight at conferences and in public speeches. At first, he was invited

to address the issue at public events in his native city, but soon he travelled all around the country, particularly in the vast Midwest, sharing his story and giving memorable and inspirational speeches. (Perlman, 2007) He was also a pioneer of the Boy Scout movement, founding some mobility and autonomy courses, in which he actively trained young people with low or no sight to travel with a cane, cook, and to overcome all the practical obstacles they would encounter. He also gave lectures at various institutions, particularly at Loyola University, and proposed ground-breaking policies to improve the welfare of children with low or no sight, especially those from the poorest social classes. (NFB, 2008; Wilson, 2013)

Here is a passage from one of his speeches, given in the State of Minnesota and transcribed in the documents of the National Federation of the Blind:

I am blind, and I am a doctor. The fact that I am standing here before you is the living proof of what we, the handicapped, can achieve. The sentiment held by the average person that we are helpless, useless objects of charity must be erased for ever. The major problem for us is not our affliction, but the wall of ignorance, injustices, indifference and misconceptions that separate us from you who can see. We must break down that wall, but we can't do it alone. We need your help. How fortunate we all are to be citizens of this great country. Let us make its bounty, its freedoms and rights we take so for granted available to every human being, regardless of physical infirmity, rich or poor. [...]

Equal rights to education, equal rights to work, equal rights to dream and achieve that dream, to achieve lives of self-reliance, pride and usefulness to our fellow man, and to live to the fullest the life God granted him." (NFB, 2008; MSAB, 1922)

Death and legacy

Jacob Bolotin died at the age of 36 on 1 April 1924—the twelfth anniversary of his graduation from Chicago College of Medicine and Surgery. The cause of his death remains a mystery; it is only known that he started to report the first symptoms of an illness in January 1924, less than three months before his death. He left behind his wife Helen Willens, but no children, as they had decided to not have any. (Perlman, 2007; Brown, 1924)

A crowd of more than 5,000 people attended his funeral, among them individuals of every social class, background and religion, colleagues, friends, clients, and many who had followed his career and accomplishments on the media. He was buried at Waldheim Cemetery next to his parents (Brown, 1924; Perlman, 2007). In an obituary published in the *Philadelphia Inquirer*, a journalist rightfully stated that Bolotin's will to help others was not a consequence of his disability, but an affront to it (Brown, 1924).

In 2008, the National Federation of the Blind created the Dr. Jacob Bolotin Awards, a series of accolades to honor individuals and organizations who have made a positive impact on the lives of people with low or no sight, particularly ones that foster independence and self-awareness.

Exactly a century after Bolotin's death, people with low or no sight today are able to become medical professionals in some countries, even if the prejudice is still heavy (Walhof, 1985; Cordes, 2010; Miller, 2023; Martin, 1977). It is indeed important to note that if blind or visually impaired people can follow such a study and career path, it is because a son of indigent Polish immigrants managed to overcome the stigma and practical barriers to write important pages in the history of science. This is probably the most notable, but not the only reason why the legacy of Jacob Bolotin deserves to be more widely known, both in the scientific community and among the general public.

His life is a powerful testament not only to the capabilities of people with low or no sight, but also serves as an important reminder to our society. Even if the context in which he lived was often far from inclusive, Bolotin managed to create or find environments, for example, his family house, the Friedmans' tavern, Dr. Copeland's practice, Dr. Van Tesleer's clinic, that allowed him the space and freedom to unleash his potential and prove that he could be an active member of society and an excellent physician. Moreover, it is fundamental to point out that the sometime tortuous inclusion process that transformed a teenager brush seller with a dream into a renowned medical professional with many clients had a broader effect—it contributed to saving hundreds of lives. That is a remarkable proof that inclusion processes not only benefit minority groups but bring significant advantages to the whole society.

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