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The Unheard Voices behind the Telephone

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The ringing of a cell phone or landline draws immediate attention as it connects one with people across vast distances. Many would remember the name of the inventor of the telephone, i.e., Alexander Graham Bell. But what many may not know is that this great inventor worked tirelessly for the deaf.

The influence behind this lifelong dogged effort came from his immediate family members — the emotional motivation grew out of love for his mother and his wife (both of whom were deaf), the cognitive connect was developed and encouraged by the men in the family — for Bell's father and grandfather were experts on the mechanics of voice and elocution. His brother (who died at an early age due to tuberculosis) was also interested in the production of sounds.

Bell's mother Eliza Grace Symonds became auditory impaired due to the after-effects of a severe illness during her childhood. When Bell was young, he was taught by his mother.

Alexander Graham Bell

He was deeply affected by his mother's gradual deafness (she started losing her hearing ability when he was around 12 years old). She had to rely on one ear trumpet (a brass musical instrument with one narrow end and one wide end). Before the modern hearing aid was invented, people with auditory impairment would hold this trumpet to the ear and lean towards the speaker in order to hear better. Despite losing her ability to hear, she

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was able to play the piano and was quite good at it. Her creativity also found expression in the painting of miniatures.

Bell, in his own way, tried to maintain communication with his mother. He developed a technique of speaking in clear, modulated tones close to her forehead so that she could feel the vibrations of his voice. As a result, she would hear him with reasonable clarity. He also learned a manual finger language so that he could sit by her side and tap out silently the conversations swirling around the family parlour. This helped her feel involved in family interactions.

From his mother, Bell inherited musical talent, and a keen ear for subtleties of sound and nuances of tone. He took music lessons and began to play the piano at an early age. Indeed, for some time, he intended to become a musician.

His father and grandfather were distinguished speech therapists. His father's devotion to the scientific study of speech had a powerful impact on young Alexander.

The machine that is being referred to here was the one that Bell, along with his brother, tried to create at the age of 16 years. With great ingenuity, they used the voice box of a dead sheep and tried to build a talking robot with a windpipe. When they blew air through the windpipe, the mouth could produce few recognisable words.

As his preoccupation with sounds grew, it led Bell to study 'acoustics'. He became a voice teacher and worked with his father, who developed 'visible speech', a written system of symbols that provided instructions to the deaf on how to utter sounds.

Bell opened a school for the deaf in Boston, USA, in 1872. He believed that his greatest pleasure and mission in life was to teach the deaf. During those days, the deaf and near-deaf people would communicate with others using signs. These signs were hardly thought of as 'sign language'. It was Bell, who continued his father's work and started a crusade to create awareness about intellectual possibilities of deaf children and teaching them to speak and read lips rather than being limited to sign language. His influence, aided by the success of his application of visible speech to teaching the deaf to talk, spread rapidly. On 24 January 1874, he addressed the first convention of Articulation Teachers of the Deaf and Dumb and continued participating in other similar events.

In 1873, he became a professor of vocal physiology at the Boston University. One of his students was his would-be wife Mabel Hubbard, who had completely and permanently lost her hearing ability to a bout of scarlet fever when she was just five years old. The disease had also damaged her inner ear's sensors, which greatly affected her sense of balance as well — to the extent that it was difficult for her to walk in the dark or an unlit house. Soon, the two were engaged to marry.

Due to his interest in acoustics, Bell started experimenting with the transmission of sounds through wires. He intended inventing a hearing device for the deaf. Mabel insisted that he should put up his device for display at the annual US Centennial Exposition in Philadelphia. Bell did not want to go there as his students' examinations were round-the-corner. He insisted that his first duty was towards his students. Mabel, on the other hand, was adamant. She secretly bought his train ticket to Philadelphia, packed his bag and called the unsuspecting Bell to the railway station. There, she handed him over his bag and told him that he was going to Philadelphia. When Bell started arguing, Mabel turned away and started walking, becoming literally deaf to his protests.

The judges awarded Bell's device with a 'Gold Medal' in the category of 'Electrical Equipment'. Bell was also awarded a 'Gold' for the concept of 'Visible Speech', which he displayed at the exposition. This brought him instant international fame. Ultimately, the device led to the invention of the 'telephone', which revolutionised communication. Unfortunately, it also embroiled him in a number of lawsuits, with many claiming the idea as their own. It was only in 1878 that Bell could once again pursue his research on speech and hearing.

Royalties from his telegraph and telephone patents allowed him to pursue this mission and make other contributions and discoveries.

Helen Keller

In 1880, the French government awarded him with the Volta Prize of 50,000 Francs, which he used to help set up the Volta Laboratory to carry out research and invention, and simultaneously, work for the deaf. Bell also founded and financed the American Association to Promote the Teaching of Speech to the Deaf in 1890.

Even after being recognised as the inventor of the telephone, Bell did not allow it to eclipse his lifelong work to help the hearing impaired. He considered his invention an intrusion on his real work as a scientist and refused to have a telephone in his study.

Bell was instrumental in bringing together Helen Keller, a blind and mute child, and Anne Sullivan, a graduate

who later became her teacher and lifelong mentor. Helen's father Captain Arthur Keller was referred to Bell for help in the treatment of his daughter. Captain Keller travelled from Alabama to meet Bell and seek help for his six-year old daughter, who had become blind and mute at the age of 19 months, possibly, from scarlet fever. It was Bell who directed them to consult Sullivan as there was no school for the blind and deaf near them.

Sullivan, with great patience and insight, helped Keller overcome her frustrated attempts at learning, teaching her to 'speak' through finger movements and read and write in Braille. After a difficult start, Sullivan was able to win Keller's trust and respect as she traced the word 'water' on her hand, and then, ran cold water over it. Keller retraced the word on Sullivan's hand, and then, eagerly went on to learn 30 more words that day. Writing to Bell shortly, Sullivan described the breakthrough as a "miracle".

Bell spread the word and corresponded extensively with Sullivan.

Moreover, Bell published an account of the events in various journals long before Keller a popular name.

In her autobiography, *The Story of My Life*, Keller fondly remembers the time she met her "benefactor" Alexander Graham Bell in 1886 as a six-year old. She recalls how Bell had lovingly placed her on his lap when she was attracted by the vibrations of his pocket watch at once. She was intrigued to know the source of the vibration. Bell took it out, and made his pocket watch chime. Although Keller could not hear the chime, she sensed that it was a different sort of vibration. Keller would later write that she felt he understood her and that she "loved him at once".

Keller was grateful to Bell for broadening her horizon, and Bell appreciated her for focussing the nation's attention towards the education of the deaf. She dedicated her autobiography to Bell, whom she addressed as her "benefactor", for opening the "door through which I should pass from darkness into light," and the two remained lifelong friends, and gradually, developed a

Excerpts from Bell's letter to Anne Sullivan

Dear Miss Sullivan,
Allow me to thank you for the privilege of reading your account of how you taught Helen Keller, which you have prepared...Your paper is full of interest to teachers of the deaf, and it contains many valuable and important suggestions.

The great problem in the education of the deaf is the teaching of idiomatic language. I am sure that instructors of the deaf will support me in urging you to tell us all you can.

Teachers of the deaf find great difficulty in selecting suitable books for their pupils; and I am sure they would thank you especially for the names of those books that have given Helen pleasure, and have proved most profitable in her instruction.

parent–child relationship. This bond lasted till Bell's death in 1922.

Bell's name remained in the popular lexicon even after his death. To honour the inventor's contributions to acoustical science, the standard unit for the intensity of sound waves was named 'bel' in the 1920s. Decibel, one–tenth of a bel, is the most commonly used metric for measuring the magnitude of noise.

Bell died at his summer home in Nova Scotia on 2 August 1922. Two days later, telephone services in the USA and Canada were suspended for 'one minute' at the precise moment when Bell was lowered into his grave. An army of 60,000 telephone operators stood silently in attention and did not connect any call as the continent's 13 million telephones went quiet.

In these days of 'inclusive education', where education is a Fundamental Right of all children, the undying tenacity that Bell and Sullivan showed towards Keller's education despite her physical challenges underlines the crucial role a teacher can play at the primary stage of a child. The story of Bell and Keller turned inclusive education into a national issue in the USA. Ever since, Keller's growth has been inspiring many parents and children in a similar situation.

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