

## An Appeal to the Senses: The Development of the Braille System in Nineteenth-Century France

The invention of Braille was a major turning point in the history of disability. The writing system of raised dots used by visually impaired people was developed by Louis Braille in nineteenth-century France. In a society that did not value disabled people in general, blindness was particularly stigmatized, and lack of access to reading and writing was a significant barrier to social participation. The idea of tactile reading was not entirely new, but existing methods based on sighted systems were difficult to learn and use. As the first writing system designed for blind people's needs, Braille was a groundbreaking new accessibility tool. It not only provided practical benefits, but also helped change the cultural status of blindness. This essay begins by discussing the situation of blind people in nineteenth-century Europe. It then describes the invention of Braille and the gradual process of its acceptance within blind education. Subsequently, it explores the wide-ranging effects of this invention on blind people's social and cultural lives.

Lack of access to reading and writing put blind people at a serious disadvantage in nineteenth-century society. Text was one of the primary methods through which people engaged with culture, communicated with others, and accessed information; without a well-developed reading system that did not rely on sight, blind people were excluded from social participation (Weygand, 2009). While disabled people in general suffered from discrimination, blindness was widely viewed as the worst disability, and it was commonly believed that blind people were incapable of pursuing a profession or improving themselves through culture (Weygand, 2009). This demonstrates the importance of reading and writing to social status at the time: without access to text, it was considered impossible to fully participate in society. Blind people were excluded from the sighted world, but also entirely dependent on sighted people for information and education.

In France, debates about how to deal with disability led to the adoption of different strategies over time. While people with temporary difficulties were able to access public welfare, the most common response to people with long-term disabilities, such as hearing or vision loss, was to group them together in institutions (Tombs, 1996). At first, a joint institute for the blind and deaf was created, and although the partnership was motivated more by financial considerations than by the well-being of the residents, the institute aimed to help people develop skills valuable to society (Weygand, 2009). Eventually blind institutions were separated from deaf institutions, and the focus shifted towards education of the blind, as was the case for the Royal Institute for Blind Youth, which Louis Braille attended (Jimenez et al, 2009). The growing acknowledgement of the uniqueness of different disabilities led to more targeted education strategies, fostering an environment in which the benefits of a specifically blind education could be more widely recognized.

Several different systems of tactile reading can be seen as forerunners to the method Louis Braille developed, but these systems were all developed based on the sighted system. The

Royal Institute for Blind Youth in Paris taught the students to read embossed roman letters, a method created by the school's founder, Valentin Haüy (Jimenez et al., 2009). Reading this way proved to be a rather arduous task, as the letters were difficult to distinguish by touch. The embossed letter method was based on the reading system of sighted people, with minimal adaptation for those with vision loss. As a result, this method did not gain significant success among blind students.

Louis Braille was bound to be influenced by his school's founder, but the most influential pre-Braille tactile reading system was Charles Barbier's night writing. A soldier in Napoleon's army, Barbier developed a system in 1819 that used 12 dots with a five line musical staff (Kersten, 1997). His intention was to develop a system that would allow the military to communicate at night without the need for light (Herron, 2009). The code developed by Barbier was phonetic (Jimenez et al., 2009); in other words, the code was designed for sighted people and was based on the sounds of words, not on an actual alphabet. Barbier discovered that variants of raised dots within a square were the easiest method of reading by touch (Jimenez et al., 2009). This system proved effective for the transmission of short messages between military personnel, but the symbols were too large for the fingertip, greatly reducing the speed at which a message could be read (Herron, 2009). For this reason, it was unsuitable for daily use and was not widely adopted in the blind community.

Nevertheless, Barbier's military dot system was more efficient than Haüy's embossed letters, and it provided the framework within which Louis Braille developed his method. Barbier's system, with its dashes and dots, could form over 4000 combinations (Jimenez et al., 2009). Compared to the 26 letters of the Latin alphabet, this was an absurdly high number. Braille kept the raised dot form, but developed a more manageable system that would reflect the sighted alphabet. He replaced Barbier's dashes and dots with just six dots in a rectangular configuration (Jimenez et al., 2009). The result was that the blind population in France had a tactile reading system using dots (like Barbier's) that was based on the structure of the sighted alphabet (like Haüy's); crucially, this system was the first developed specifically for the purposes of the blind.

While the Braille system gained immediate popularity with the blind students at the Institute in Paris, it had to gain acceptance among the sighted before its adoption throughout France. This support was necessary because sighted teachers and leaders had ultimate control over the propagation of Braille resources. Many of the teachers at the Royal Institute for Blind Youth resisted learning Braille's system because they found the tactile method of reading difficult to learn (Bullock & Galst, 2009). This resistance was symptomatic of the prevalent attitude that the blind population had to adapt to the sighted world rather than develop their own tools and methods. Over time, however, with the increasing impetus to make social contribution possible for all, teachers began to appreciate the usefulness of Braille's system (Bullock & Galst, 2009), realizing that access to reading could help improve the productivity and integration of people with vision loss.

It took approximately 30 years, but the French government eventually approved the Braille system, and it was established throughout the country (Bullock & Galst, 2009).

Although Blind people remained marginalized throughout the nineteenth century, the Braille system granted them growing opportunities for social participation. Most obviously, Braille allowed people with vision loss to read the same alphabet used by sighted people (Bullock & Galst, 2009), allowing them to participate in certain cultural experiences previously unavailable to them. Written works, such as books and poetry, had previously been inaccessible to the blind population without the aid of a reader, limiting their autonomy. As books began to be distributed in Braille, this barrier was reduced, enabling people with vision loss to access information autonomously. The closing of the gap between the abilities of blind and the sighted contributed to a gradual shift in blind people's status, lessening the cultural perception of the blind as essentially different and facilitating greater social integration.

The Braille system also had important cultural effects beyond the sphere of written culture. Its invention later led to the development of a music notation system for the blind, although Louis Braille did not develop this system himself (Jimenez, et al., 2009). This development helped remove a cultural obstacle that had been introduced by the popularization of written musical notation in the early 1500s. While music had previously been an arena in which the blind could participate on equal footing, the transition from memory-based performance to notation-based performance meant that blind musicians were no longer able to compete with sighted musicians (Kersten, 1997). As a result, a tactile musical notation system became necessary for professional equality between blind and sighted musicians (Kersten, 1997).

Braille paved the way for dramatic cultural changes in the way blind people were treated and the opportunities available to them. Louis Braille's innovation was to reimagine existing reading systems from a blind perspective, and the success of this invention required sighted teachers to adapt to their students' reality instead of the other way around. In this sense, Braille helped drive broader social changes in the status of blindness. New accessibility tools provide practical advantages to those who need them, but they can also change the perspectives and attitudes of those who do not.

## References

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