

Alexander Graham Bell and the 1900 Census

By Chris Martin, Historian, Public Information Office

Although [Alexander Graham Bell](#) achieved worldwide fame as the first person to [patent the telephone](#) on March 7th, 1876, he was not content to merely be the person who revolutionized human communication. In addition to this groundbreaking legacy, Bell was also a teacher, a speech therapist, and a special agent of the U.S Census Bureau.

One of Alexander Graham Bell's other lifelong interests was helping the deaf and those with speech impediments. This interest came early as his mother, Eliza Grace Symonds, began losing her hearing at age 12 and was completely deaf by the time of Bell's birth. As a result, Bell's father, [Alexander Melville Bell](#), a noted professor of elocution and speech, eventually devoted himself to the education of the deaf using a form of Visible Speech of his own devising. Bell himself became fascinated with the study of acoustics and how it could be used to aid communication with the hearing impaired.

In 1871, the principal of the Boston School for Deaf Mutes (now Horace Mann School for the Deaf), invited the senior Bell to provide training to her instructors. He declined, instead recommending his son, who had long worked with him. This course was such a success that young Bell found himself repeating the course at various schools for the deaf across New England. In 1872, he returned to [Boston](#) to set up his "School of Vocal Physiology and Mechanics of Speech" and then taught at the Boston University School of Oratory.



Bell, on the top step, with teachers and students of his Boston school, 1872. (Library of Congress)

After a year, Bell decided to focus his energy on experimenting with sound, in particular with acoustic telegraphy, which culminated in his signature invention. During this time, he continued his work with just two pupils—[Mabel Gardiner Hubbard](#) and six-year-old [George Sanders](#). Bell and Hubbard married in 1877, further entwining him into the world of the hearing impaired.

In 1879, the young family moved to Washington DC, where Bell founded the Volta Laboratory. In 1887, he opened the Volta Bureau (now the Alexander Graham Bell Association for the Deaf and Hard of Hearing), in [Georgetown, Washington, DC](#), dedicated to "the increase and diffusion of knowledge relating to the deaf." One of Bell's pupils, and lifelong friend, [Helen Keller](#), performed the groundbreaking ceremony.

Between this and his experience teaching the deaf and mute, Alexander Graham Bell naturally became one of the preeminent men of his day in the field of hearing and speech disabilities. As early as 1889, Bell made recommendations to the Superintendent of the Census Office, [Robert Percival Porter](#), for proper enumeration of the deaf and blind in the census. He emphasized the need for properly phrased questions in order to discern true levels of disability and the acquisition of these disabilities. The Census

Office did take into account some of Bell's recommendations for the [1890 Census](#) , however it did not fully implement them all.



Bell at the opening of the long-distance line between Chicago and New York, 1892. (Library of Congress)

In light of the previous missteps of the census in counting people with disabilities, on October 10, 1900, Census Director [William R. Merriam](#) appointed Alexander Graham Bell “Expert Special Agent of the Census Office, for the preparation of the Report on the Deaf and the Blind.” Although the report was not completed until 1906, the [1900 Census](#) data on the [blind](#), [deaf](#) and [dumb](#) (the common phrasing for people with speech disabilities at the time) was the most comprehensive in census history. In addition to more precise statistics, such as varying levels of blindness, deafness, and speech impediments and age at time of disability, one of the most important changes to the survey was the manner in which enumerators asked the questions. Based on personal experience, Bell knew that people were sensitive to the disabilities of their loved ones, and would more readily answer properly phrased questions. In particular, it was important to differentiate those with hearing, speaking, or sight impairment from those with mental or physical disabilities. For this reason, in 1900, not only did Bell design the supplemental questionnaire, but his name was on the form with the

declaration from the director that [“he is empowered to conduct in his own name the correspondence relating to this branch of the census inquiry.”](#)

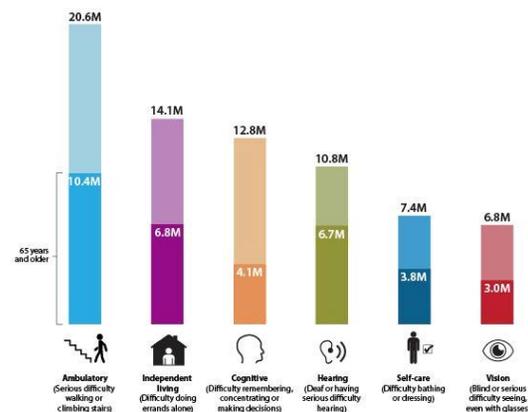
Bell's report was a huge leap forward in terms of recognizing various disabilities and tracking causes, but it took its toll on a man in his 50s. In 1904 Mabel Bell wrote to her son-in-law, [Gilbert Hovey Grosvenor](#), “I hate this census with a personal hatred, I feel it is taking from Father time and energy which he cannot spare.”

Neither Bell nor any other special expert received an appointment to examine the blind, deaf, and dumb during the [1910 Census](#), and in 1915, Bell wrote to his friend Fred DeLand that the results were “a perfect fizzle, not at all comparable to any former census.” Between 1910 and 2000, coverage of disabilities was piecemeal. Any in-depth collection and analysis focused on the ability of the disabled to work. It was not until the [2000 Census](#), after the passage of the Americans with Disabilities Act in 1990, that census questions truly began to uncover information on the limitations of people with disabilities outside of their economic input.

Currently the Census Bureau counts Americans with disabilities as part of the ongoing American Community Survey. The different options for disability include: hearing difficulties, vision difficulties, cognitive difficulties, ambulatory difficulties, self-care difficulties, and independent living difficulties. In addition to measuring different levels of disability, some of the changes that Bell influenced are still in effect, such as divisions of disability based on age, and counting the occupation and employment status of those with disabilities.

Here are some more interesting facts relating to Bell's legacy from the U.S. Census Bureau and other federal agencies:

Prevalence of Disabilities for Ages 18+ Individuals in Millions



United States Census Bureau
U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov
Source: 2014 American Community Survey
www.census.gov/acs

- The impact of the telephone was so profound and immediate that the Census Bureau began collecting data related to the industry in 1876, a practice which continues to today. In 1876, there were [3,000](#) telephones in the United States. In 1900, there were [1,356,000](#) telephones, and by 1970, there were [120,218,000](#) telephones, of which [87,137,000](#) were residential.
- In 1880, there was an average of [239,000](#) phone calls a day, [2,000](#) of which were toll calls (additional charges). In 1970, there were [485,200,000](#) daily conversations, of which [26,800,000](#) were toll calls.
- In 1915, there was [\\$43 million](#) of public telephone and telegraph wire installed, while in 1970 there was [\\$2.97 billion](#) of public line installed.
- In 1880, Alexander Graham Bell's company had [30,000](#) miles of telephone wire installed. By 1970, the company had [601,912,000](#) miles of wire installed.
- Between 1920 and 1998, the percentage of American households with telephone service went from [35](#) percent to [96.2](#) percent. In 1998, [96.2](#) percent of households had landlines, while [36.3](#) percent of households had cell phones. In 2011, [70.5](#) percent of households had landlines, while [89](#) percent of households had cell phones. In 2015, only [2.5](#) percent of households had no type of telephone.
- According to data collected by the American Community Survey (ACS), there were an estimated [39,906,328](#) Americans with disabilities, or [12.6](#) percent of the entire population in 2015.
- Of the [39,906,328](#) Americans with disabilities identified by ACS data, [11,267,453](#) had a hearing disability. In 2015, the largest concentration of people with hearing disabilities was in the population aged 75 and over, and [22.6](#) percent of the entire population 75 and over had hearing difficulty.
- There were [7,117,518](#) workers with disabilities employed in the United States in 2015. Out of those, [2,023,945](#) had hearing difficulties.

- The Department of Labor found that of the population of people with disabilities that are employed, [31.3](#) percent work in management, professional and related occupations, which is the most popular field of employment, while only [0.6](#) percent work in mining, quarrying and oil and gas extraction occupations.
- In 2012, there were [2,344](#) translation and interpretation services (NAICS 541930) employing [24,926](#) people.
- In 2015, California had the largest number of disabled workers at [682,393](#), while Texas had the most workers with hearing difficulties at [182,807](#). The District of Columbia has both the fewest number of people working with disabilities at [14,214](#) and the fewest people working with hearing difficulties at [2,498](#).
- In 2015, West Virginia had the largest percentage of noninstitutionalized civilians with disabilities at [19.4](#) percent of the population, while Utah had the least at [9.9](#) percent.
- In 2015, Owsley County, KY had one of the highest rates of disability with [34.3](#) percent of the noninstitutionalized population having a disability, while Eagle County, CO, had the lowest rate of noninstitutionalized population with disabilities at [4.5](#) percent.