The Invention of the Heroic Inventor

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The new electric communication technologies of the nineteenth century were a miracle that brought about great social changes and spurred grand utopian visions of the future. "'One miracle has followed another until we can but wonder what apparent impossibility will be accomplished next,' intoned the National Electric Light Association’s President Wilmerding." The telegraph and the telephone were able to unlink communication from transportation, allowing communication to proceed at the speed of light. Although the general public appreciated the utility of these communication systems, the miraculous nature of their operation caused great confusion. "For instance, a countryman... [asked] a telephone man... 'Now, mister, what makes the thing work? Thar's yer wire and thar's that 'er trumpet and all that, but ain't thar suthin' aside o' that? Whar's the steam, the push to the thing? What makes the talk go 'lang so?" In order to understand and to deal with the paradigm shift brought on by electric communication systems, the people needed simple symbols that would tie in with the past and provide fixed landmarks for the future. Journalists formed the notion of a heroic inventor to provide a symbol of technological change that was easily understandable and that followed in the tradition of the mythical American self-made man.

The belief of invention as a heroic act, produced by popular culture and the press, runs counter to the view of invention suggested by historical evidence. The history of the telegraph and telephone supports the notion of invention as a social process in which many different groups and individuals participate cooperatively, competitively, and simultaneously. Samuel F.B. Morse did not independently and uniquely invent the telegraph and the telegraph system. Charles Wheatstone and William Cooke had established the needle telegraph system throughout the British Empire, using galvanometers as indicators. Although “Morse was clearly the central figure in the development of an American telegraph system,... a variety of other
individuals contributed to its evolution between Morse’s initial conception in his 1832 drawings and its first commercial introduction in 1844.⁵ Morse received considerable assistance from Leonard Gale, Alfred Vail, F.O.J. Smith, and others.⁶ “Gale... possessed the critical knowledge of recent work on electromagnetism,... which made an electromagnetic telegraph practical.”⁷ The work of “researchers investigating electromagnetic phenomenon [sic] played a crucial role in the successful development of Morse’s invention.”⁸ “Vail’s help was essential ‘in constructing and bringing to perfection, as also in improving the mechanical parts of [the telegraph].’”⁹ The hub and spoke topology of the American electric telegraph system was taken from the chappe system in France.¹⁰ “To credit Morse as the inventor of the first American electric telegraph is to ignore the collaborative character of that invention.”¹¹ Despite the social nature of telegraph’s invention, Morse was credited as being the heroic individual whose invention could change the world. The “drawing of Morse working on his instruments in [his university apartment] capture[d] the popular image of the lone inventor in his garret struggling to bring his ideas for instantaneous electric communication into practical operation.”¹²

Alexander Graham Bell has the public image of being the telephone’s heroic inventor, like Samuel F.B. Morse and the telegraph. The invention of the telephone, however, followed the social process model, just as the invention of the telegraph did. Philip Reis, a German inventor, had invented a functioning telephone that was able to transmit sound over a wire in 1860, preceding Bell’s patent by 16 years.¹³ Elisha Gray, an inventor for Western Union, and Bell both filed applications for the telephone with the patent office on the same day, suggesting simultaneity of invention.¹⁴ Reis and Gray invented telephones before or at the same time as Bell, which discounts the sole inventor account. Even on his own design, Bell had assistants that provided significant contributions.
For a society looking to understand technological change, the social process of invention was too complicated a model. "Americans recognized that technological progress was fraught with good and evil, and the press made both their hopes and their fears more manageable by personifying this ambivalence." The heroic inventor was an uncomplicated symbol that could be used to easily comprehend the changes that were occurring. The inventor stood as a guidepost in the murky environment of a society going through vast social and technological change. "One of the most durable and popular conventions was the inventor-hero. The late-nineteenth-century incarnation of the self-made man, the inventor-hero blended the traditional values of individualism, hard work, and self-denial with the newer realities of rapid technical change. He was used to personify, and humanize, the rise of industrialization." The inventor-hero followed in the footsteps of frontier heroes who conquered the wilderness. Rather than taming a piece of nature in the West, however, the inventor conquered a part of nature itself, electricity. In fact, it was believed that "the heroic inventor could inspire others as a prominent example of the self-made man." "Journalistic renditions of inventor-heroes … suggested that with persistence, patience, and hard work, any technically talented young man [could], through inventing, establish his own intellectual and financial independence." Hence the heroic inventor was not only a symbol of technological change, but was also a role model for young men to emulate in the new electrical age.

"Men such as Samuel Morse… and Alexander Graham Bell… personified what was best about the American cult of invention." Both men met the criteria established by journalists to become heroic inventors. Morse struggled through nearly 20 years of inventing before coming up with the idea of the telegraph, and then struggled for 12 more years refining it and bringing it to market. Throughout this struggle, he displayed hard work, persistence, patience, and ingenuity, thus displaying all of the hallmarks of the heroic
inventor. He was regarded as working alone in his public portrayal, thus expressing the individuality that also defined the inventor-hero. Even though he did not possess the mechanical skill or the knowledge of electromagnetism to have produced the telegraph, his name became synonymous with telegraphy, both at the time, and in the annals of history. "As Electrical World noted..., 'All the world admires a savant, but it will accept a man of only moderate learning if he will create from the remnants of knowledge something for the immediate good of humanity.'"20 Alexander Graham Bell’s invention of the telephone was also a long and drawn out process,21 involving "arduous labor and ingenuity, two characteristics long considered essential to the self-made man."22 Bell possessed a public persona of individuality that his rival Elisha Gray, who worked for Western Union— the first modern corporation, did not. "The rise and increasing hegemony of institutions in American life made the traditional myths of individualism, as apotheosized in the hero, all the more compelling."23 Bell’s belief in and enthusiasm for the telephone as a useful communications medium24 also contributed to his rise as a heroic inventor.

The communications revolution that swept across America in the nineteenth century broke down traditional social structures and transformed the cultural landscape. The heroic inventor was invented by journalists to act as a stable landmark through the social flux brought about by telegraphy and telephony. The social construct of the heroic inventor came to be “a stock character in the press,”25 that was called upon whenever a new invention caused rapid social change. Samuel F.B. Morse and Alexander Graham Bell came to be defined as the heroic inventors for the telegraph and telephone, respectively. Both men fit the template that had been established and were therefore cast as heroic inventors both at that time and forever in popular historiography.
5 Paul Israel, *From Machine Shop to Industrial Laboratory*, Baltimore, p. 36.
7 Paul Israel, *From Machine Shop to Industrial Laboratory*, Baltimore, p. 28.
8 Paul Israel, *From Machine Shop to Industrial Laboratory*, Baltimore, p. 28.
9 Paul Israel, *From Machine Shop to Industrial Laboratory*, Baltimore, p. 32.
12 Paul Israel, *From Machine Shop to Industrial Laboratory*, Baltimore, p. 27.
17 Paul Israel, *From Machine Shop to Industrial Laboratory*, Baltimore, p. 42.