



## WHAT HATH GOD WROUGHT

by Daniel Walker Howe

When I signed on to do my volume in the Oxford History of the United States, several volumes had already appeared, so I knew what was expected. I also knew that I wanted to address not just fellow academic specialists and our captive audiences in the courses we teach but also the general curious public. I also wanted to combine the traditional kind of history--political, military, diplomatic--with the newer kinds of history: social, cultural, and economic. Both kinds of history are essential for a full understanding of the past.

One of the many aspects of history that I treat in the book is innovation in communications and its consequences. On May 24, 1844, Prof. Samuel F.B. Morse, sitting in the chambers of the U.S. Supreme Court in Washington, tapped out a message on a device of cogs and coiled wires. He used a code that he had recently devised and spelled out "What Hath God Wrought." Thirty miles away in Baltimore, Morse's associate, Alfred Vail, received the electric signals and telegraphed the message back. As those who witnessed it understood, this demonstration would change the world. For thousands of years, messages had been limited by the speed with which messengers could travel and the distance that eyes could see signals like flags or smoke. Neither Alexander the Great nor Benjamin Franklin two thousand years later had known anything faster than a galloping horse. Now, instant long-distance communication would become possible for the first time.

### AMERICA IN 1815-48

The years 1815-48 witnessed dramatic changes in the United States. The America of 1815 was what we would call a third-world country. Most people lived on isolated farmsteads. Their lives revolved around the weather and the hours of daylight. Many people grew their own food, and many wives made the clothes for their own family. It was the difficulty of transportation and communication that kept their lives so primitive. Only people who lived near navigable waterways could easily market their crops and get the money to buy commodities that were not produced locally or which they could barter with their friends or a local store keeper. With transportation costs high, only luxury goods could bear the costs of long-distance transportation over land. Information from the outside world was one of the most precious of these luxuries.

By 1848, the U.S. was no longer a third-world country. It had become a transcontinental major power. The revolution in communications facilitated this transformation. Improvements in transportation such as the Erie Canal, the railroad, the steamboat, had also wrought enormous changes. Americans were much more integrated into a global economy by. The improvements in transportation and communications liberated people from the tyranny of distance. That is, they liberated people from isolation—economic, intellectual, and political.

Meanwhile, America was extending its territory westward until it stretched from sea to sea, creating a transcontinental empire that the new improvements in transportation and communication could integrate. The America of 1848 then was significantly more like the U.S. of today than it had been in 1815.

It's useful to compare the impact of the telegraph with that of the internet in our own times. The telegraph probably lowered the cost of business transactions even more than the internet has. And it certainly seemed to contemporaries as an even more dramatic transformation. Commercial applications of Morse's inventions followed quickly. Most Americans then earned their living through agriculture, and American farmers and planters increasingly produced food and fiber for far-off markets. Their merchants and bankers welcomed the chance to get news of distant prices and credit. The newly invented railroads used the telegraph to schedule trains, so they wouldn't collide on the single tracks of the time. The electric telegraph solved commercial problems and at the same time had huge political consequences. Along with improvements in printing, it facilitated an enormous growth of newspapers, which in turn facilitated the development of mass political parties.

The telegraph had much the same effects in the 19th century, then, that the internet is having today: speeding up and enabling commerce, decoupling communications from travel, fostering globalization, and encouraging democratic participation. The tsar of Russia worried about the democratic implications of the telegraph, just as the rulers of China today worry about the democratic implications of the internet.

One of the most tragic consequences of the traditional slowness of communications had been the war of 1812, between the U.S. and Great Britain. Congress declared war on Britain to protest British interference with American ocean commerce. Two days before Congress voted for war, the British government announced its repeal of their restrictions, but no one in Washington knew that. So the war began unnecessarily and it ended with an unnecessary bloody battle at New Orleans fought in January 1815, two weeks after the peace treaty had been signed. But Louisiana was a long way from Belgium, where the negotiators had signed the treaty.

## THE TELEGRAPH

Samuel Finley Breese Morse, whom his family called Finley, had a good head for business and for publicizing his invention. He always insisted on being called professor, and yet his professorship had nothing to do with inventing the telegraph. He was not a professor of science or engineering, but of art. He taught painting at NYU. He was in fact a quite gifted and respected painter, as is evidenced by his commission to paint President James Monroe (1817-25) while Monroe was in the White House.

Besides the innovations in communication, the innovations in transportation reinforced the effects of these. Early railway cars looked like stagecoaches, for the same reason the first automobiles looked like horseless carriages. This is what people were used to. The early locomotives and the early steamboats both had horrific safety records, because they both had steam boilers that frequently blew up.

When Morse failed to get a government commission to paint the giant historical murals inside the dome of the capitol building in Washington, he became bitterly disappointed. In his anger, he turned away from his career in painting and took up instead what had been a kind of hobby up until that time, his interest in the possibility of electric telegraphy. Morse himself did none of the basic research on which the electric telegraph was based. Electromagnetism had been studied by an international succession of researchers, including Michael Faraday in England and in America by a professor at Princeton named Joseph Henry who would later become the first head of the Smithsonian Institution in Washington, DC. Prof. Henry had not realized how close his working models were to practical application – he just called them his philosophical toys. He'd taken out no patent. Morse started out by assuming that his invention would be a government-owned monopoly. The Post Office, after all, was a government monopoly, and that was the model that Morse had in mind. The money to pay for that first telegraph line, the wire that was laid from Washington to Baltimore, came from a congressional appropriation. So the government did own that little first line.

But it turned out that party politics got in the way of government ownership of the telegraph. The party that endorsed active government encouragement of business industry and transportation was called the Whig party. The party in power was the Jacksonian Democratic party, which favored strict laissez-faire. Morse himself was a Democrat, but even he couldn't interest the Democratic administration of President James Knox Polk in owning and operating the telegraph.

The telegraph did turn out to be monopoly, but a privately owned one. The Western Union Company, in which Morse owned a large share, dominated the American telegraph network from 1866 on. Even long after the invention of the telephone, Western Union telegrams remained a prominent feature of American life. They were the way an important message was sent. WU transmitted its last telegram on January 27, 2006.

## TRANSFORMED POLITICS

Instant long-range communications coupled with improvements in transportation, represented by railroads, steamboats, and canals, revolutionized American life between 1815-48. That impact went far beyond commerce to influence every aspect of life. For example, the innovations in printing and improvements in transportation facilitated the production and dissemination of books. This was what enabled the rise of the novel as a literary genre. The newly efficient post office carried the cheap newspapers and political tracts that made nationwide mass politics possible. Mass literacy and the institutions that fostered it acquired increased civic importance. Both post offices and public schools were central to the political controversies of the day. The multiplication of local post offices expanded the federal bureaucracy and became a great source of political patronage. The post office also encouraged political participation because in every little town there was somebody who was or wanted to be the postmaster, and that person would get out the vote of his friends and neighbors to make sure that the party won which would give him the postmastership. As the schools multiplied, politicians argued over who should control them and whether the teachers' jobs should also be part of political patronage.

A wonderful picture of American politics in action comes from George Caleb Bingham's "The County Election." You see a great many people, all of whom are male. The polling place would stay open for two or three days, to allow the farmers time to

come in from their scattered farms to the county seat. Both the strengths and the weaknesses of politics area on display. Some of the men are discussing politics earnestly, but some are just getting drunk. The social democracy that is encouraged by political democracy is on display; the candidate tips his top hat to a humble farmer in shirtsleeves to ingratiate himself with the voters. There's a man near the top center who is taking the oath from the clerk, swearing that he really is the name he has just given. He will then give his vote orally--they didn't have secret ballots in those days, even in places where they used ballots, the ballots were printed by the parties, which made sure that there ballot was a different color from the other ballots so you could easily see which one was being put into the ballot box. That way, if you had paid someone for his vote, you knew you were getting your money's worth. The little boys in the foreground are playing a game, and the artist is thus subtly hinting that the grown men are also playing a game of their own, the game of politics.

With the expansion of the printed media, the battle to influence public opinion became ever more fervent. The new media of communication brought the rival party programs to the attention of the electorate remarkably effectively. In fact, a higher percentage of the legally qualified voters went to the polls in the 19th century than go to the polls today (of course, a smaller percentage of the population was legally qualified to vote). But the two major parties of the antebellum period, the Democrats and the Whigs, commanded fierce loyalty from their parties, possibly in part because there weren't yet any professional sports teams to capture the imagination and loyalty of the public. Almost all Americans of this period expected and wanted their country to change and grow; some of them thought of this principally in terms of geographical expansion across the continent, others however thought of it in terms of enriching the quality of American life, through industrialization, through increased educational opportunities, or even in improving the treatment of women or racial minorities. These rival visions of the future dominated the political debates of that era.

At the time of the invention of the telegraph, the Democratic Party of Andrew Jackson was the party of territorial expansion, what it called realizing America's manifest destiny--its plain, obvious destiny, what people today call imperialism. The Whig Party was the party of economic development. Its leaders included John Quincy Adams, Henry Clay, and the future president Abraham Lincoln. The Whigs advocated a national bank to provide a stable uniform currency, a protective tariff to encourage industrialization, subsidies to transportation projects and state supported public school systems. The Whigs called their program the American system, to emphasize that it was intended to make the nation strong and economically independent.

## COMMUNICATIONS AND RELIGION

The text of Morse's demonstration message, "What Hath God Wrought," came from the Bible, Numbers 23:23. "It shall be said of Jacob and of Israel, What hath God wrought!" (King James) Annie Ellsworth, Prof. Morse's girlfriend, had suggested the version to him as appropriate for the occasion. The quotation proved the perfect choice, capturing the inventor's own passionate Christian faith and his conception of himself as an instrument of providence. Morse's invocation of the Bible typified that recurrent importance of religion that has often characterized American history. When the transatlantic telegraph cable was first laid in 1858, Queen Victoria and President Buchanan exchanged the first message that it carried, also with a biblical quotation. "Europe and America are united by telegraph. Glory to God in the highest, and on earth, peace, goodwill toward men." That message typified the excitement in technological progress characteristic of the 19th century, but it was overly optimistic. The new cable soon malfunctioned, and then the American Civil War intervened, and so the transatlantic cable was not successfully relaid until 1866.

Religious revivals were quite common in rural America in this time. These were more common among women than men, and were social as well as religious events. They brought people together from other isolated farmsteads, and were a chance to exchange recipes or catch your friends up on what your children had been doing. People would come and stay for several days. It took you a long time to get there, and it wouldn't have made sense to try to go home again in the same day, so people would pitch their tents and camp out, hence the name camp meetings.

Samuel Morse's synthesis of science with religion represented the predominant American attitude of this time. Only a few eccentrics worried about any conflict between scientific and religious truth, whereas today, the hypothesis that the universe reflects intelligent design has provoked bitter debate. The intellectual universe of the early 19th century was very different. Then, practically everybody believed in intelligent design. Even the most outspoken critics of organized religion weren't atheists, they were deists. That is, they believed in an impersonal, remote deity who had created the universe and had designed it so perfectly that it ran along of its own accord, following natural laws without the need for further divine intervention. That's why, according to the deists, the Bible was irrelevant and superfluous. We had a sufficient example of the divine creator just by looking at nature.

Awakenings of religion, expansion of education, interest in science, and technological progress all went hand in hand. Evangelists welcomed technological advances and mass education, which helped them spread the good news of Christ. Like education and science, literature too was saturated with religious meanings and motivations. The writers of America's literary renaissance took advantage of the improvements in communications to market their art and their moral values to larger and more widespread audiences than writers had ever enjoyed before. The all-time blockbuster bestseller of the 19th century, Harriet Beecher Stowe's *Uncle Tom's Cabin*, purveyed its author's moral and religious motives and intentions to an

international audience.

One fascinating piece of Christian propaganda from this period is an allegory showing a printing press with an angel hovering over it, a celebration of the printing press as an agent for converting the world to Christianity. In one corner you see an American girl reading some Christian tract; in another, which clearly depicts the Middle East because of the architecture, you have a Christian missionary passing out tracts to a woman and child. The artist who created this image is ignoring the fact that in the Ottoman empire the conversion of a Muslim to Christianity was subject to the death penalty.

## OTHER IDEA DIFFUSION

The new media of communication enabled all sorts of ideas, not just political, not just mainstream religious ideas, but all kinds of new ideas too, to be spread. When Lucretia Mott and Elizabeth Cady Stanton organized the first women's rights convention in 1848, that event would have been of no particular consequence if it hadn't been that the story was picked up by the wire services--the AP had just been founded. It was distributed around the country, the newspapers carried the story because it seemed interesting, of course their editorials often mocked it, but as they say, they can say whatever they want about me as long as they spell my name right. Importantly, a gathering of local farm and village folk in western New York got nationwide publicity and started people thinking, started women holding other conventions in imitation of that one.

Every kind of new idea could be spread. Joseph Smith, the founder of the Mormon religion who claimed to have dug up golden plates with inscriptions in another language, lived not far away from Lucretia Mott in western New York. His ideas, too, would rapidly be spread all around the country and make it over to Europe too.

When gold was discovered in California in 1848, its impact too revealed the pivotal stage of communications at that moment. In some ways, it showed the immemorial limitations on communications. Because of course California was not yet linked to the telegraph network. There were no telegraph wires west of the Mississippi in 1848. News of the discovery traveled fastest around the Pacific Rim, to the west coast of Mexico, Peru, even newly settled Australia, and of course to China. That's because water transportation was still the fastest kind of transportation, and news and commodities always traveled easiest and most quickly along the water. That has been true for centuries. So that part of it illustrates the old kind of transportation and communication.

It took months for the news to travel across North America, and then of course it had to travel across the Atlantic to get to Europe. Even so, once the eastern United States and Europe had become aware of it, the response to the discovery of gold in California illustrated the tremendous strides transportation and communications had made in just a few years. Newspapers publicized regularly scheduled passenger trips. We take these for granted, but it used to be that if you were a passenger on an ocean-going ship, you went to the port and hung around until the next freight-laden trip decided to leave. Now there are regularly scheduled passenger trips. Suddenly hundreds and then thousands of people are going to want to make the trip across the continent. No logistical effort comparable to this had ever been undertaken before except for raising an army. So the Gold Rush, bringing people to California from all over the world--from Latin America, East Asia, from Europe, the U.S. East Coast--is the first truly global popular response of its kind.

In one sketch of the earliest days of the California Gold Rush, we notice all kinds of people from different countries and occupations and walks of life. The Indians themselves are involved in panning for gold; some men have already gotten into a fight. The tents and teepees are pitched, but for the most part these men are probably sleeping on the ground, far from having erected any kind of shantytown. Another contemporary image, "California News" by William Sidney Mount (1858), shows the improved access to information from all over the world and its effect. The painting depicts the inside of a post office. People in those days had to go to the post office to get the mail, it wasn't delivered to your home. But what the post office mostly carried were newspapers, rather than letters. In the center of the image we have a man who is reading about the discovery of gold. He's reading it out loud, and people are quite interested. Another man, a ticket agent, is selling tickets on a ship. Mind you, there's no Panama Canal. So the ship will either take you around Cape Horn or to Panama, where you will have to make arrangements to cross the isthmus on a donkey or the like and buy another ticket up the coast. This has hazards of its own--people were worried about getting malaria and so forth. Also interesting is the advertisement on the wall that there's a ship there that had previously been engaged in the tea trade with China, which you can tell because of its name, but which is now in the business of taking passengers to California.

## GREAT EXPECTATIONS

American people of that time believed in progress, and most of them believed in a divine providence that would guide their progress. They fully expected the telegraph to be part of the divinely supervised progress that would promote democracy, peace, and justice, not only in America but all over the world. There's a wonderful passage from a Methodist women's magazine predicting that the telegraph will set in motion events that will culminate in the millennium. Today, with our hindsight, we can see that the electric telegraph did indeed change the world, but not all that much as to produce the millennium.

It did, however, feed into the war against Mexico, because the telegraph fed the American public's appetite for news of that war. The war against Mexico was bitterly controversial in the U.S. It was in fact a war that was supported by the Democratic administration and opposed by the Whigs. Lincoln ran for Congress in 1846 as an opponent and critic of the war. He was elected, and when he got to Congress and took his seat in the House of Representatives, he made a couple of very powerful antiwar speeches.

So, what hath God wrought? The biblical message sent to demonstrate the telegraph typified the attitude of the devout inventors as religious countrymen. In the King James translation, it's an affirmation that ends with an exclamation mark, but in Morse's time, it was often misquoted as ending with a question mark. In the title of my book, I use it without punctuation, as Morse originally transmitted it. (He probably hadn't yet invented a code for punctuation marks.) But this makes my title an ambiguous quotation that serves as does my book as a whole both to affirm and to question the American experience from 1815 to 1848.

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