Making Millions And Making A Difference:

What We Can Learn from Peter Cooper

The 1999 Henry Whitney Bellows Lecture

Robert Q. Topper

Preface

When I first came to the Cooper Union in 1993, I knew that I was at a remarkable place. The faculty member who I replaced was using texts for the junior-level physical chemistry course that other colleges used for graduate-level courses on the same subject. I thought that there must be some kind of mistake, but quickly learned that these were some of the hardest-working and most talented engineering students on the planet. Slowly it dawned on me that the remarkable group of engineers, architects and artists studying their professions here were brought together according to the remarkable vision of its founder, Peter Cooper. I started digging and learning more about him and found that he was largely unknown to most New Yorkers then, even though his vision had not only established one of the oldest colleges in the city (Cooper Union was founded in 1859), but had directed the development of many other aspects of civic life, including the public schools and the city's water supply and distribution system. This being the early days of the Internet, I started making web pages full of what I was learning, and linking to others' pages as well.

In the spring of 1999 I was invited by Mary-Ella Holst of the Historical Society of the Unitarian Church of All Souls in New York City to come and give a lecture about Peter Cooper. He was a member of the church, as explained in this document. Someone on the committee had apparently been surfing the web. To say I was surprised was a bit of an understatement. Cooper Union is home to actual historians, one of whom is an actual expert on the history of the Cooper Union. In fact my first response was something like "You must be looking for Peter Buckley. I'm not a real historian – all I've done is to set up a few web pages describing some interesting facts about Peter Cooper." As I recall, Ms. Holst said something like "No, no…we don't want a professional historian. We want you. We aren't professional historians either. We're like you –ordinary New Yorkers with a passion for history." So, how could I refuse? But if they'd have asked Buckley, they'd have gotten a much better. But I did the best that I could do. To make a long story short, this is one of the things I spent my one and only sabbatical to date on – learning and speaking about Peter Cooper's life and accomplishments.

Sometimes learning about historical figures can be a disappointment; we all have feet of clay. This never happened to me as I learned about Peter

Cooper. He was a person who struggled through poverty and then found ways to help others. He devoted his life to humanity and to the advancement of science and art. He inspired his children, his peers and his community to do good things, and to try to be good to one another. Now, that's a remarkable legacy, and one we can all aspire to. We can all make a difference in other people's lives, whether or not we have made millions.

This is a transcript of a speech, not an academic paper. It's not adequately cited. It's full of grammatical errors. Without meaning to, it's possible that I have inadvertently used phrases (even sentences!) written by one or more of my sources. If I have done so, I hope they'll accept my apology. I have tried to cite all of my sources at the end of the speech; please insert quotation marks wherever they seem to you to be most appropriate. Phyllis Krasnick's Ph.D. thesis at NYU was particularly helpful to me and I highly recommend it. I have added names of the various sections in order to improve its readability, but it's not very readable. I hope you'll accept my apology for that. I've also left some things out, including Peter Cooper's support for Limestone College in North Carolina, simply in the interest of time (remember, it's a speech).

I am very grateful to all of my colleagues and students at the Cooper Union. In particular, Carol Salomon, Ulla Volk, John Bove and Peter Buckley were of great assistance to me in different stages of this project.

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Introduction

I'd like to express my thanks to the All Souls Historical Society, and especially to Mary-Ella Holst, for inviting me to deliver the 1999 Henry Bellows lecture. Today I will try to do my best to describe the life, times, achievements and remarkable philanthropy and inventiveness of one of All Souls' most notable members, a native New Yorker and self-made multimillionaire of the 19th century who, with his family's support and assistance, gave most of his fortune away to found the city's only existing free college, and the only school in the nation dedicated to art, architecture and engineering. I am speaking of Peter Cooper.

I suspect that this was not known to the committee, but the timing for this presentation is most appropriate. It so happens that exactly 140 years ago this month, on November 2, 1859, the Cooper Union for the Advancement of Science and Art first opened its doors to any adult New Yorkers who wanted a tuition-free education, without regard to gender, religion, nationality or race. It is important to note at the outset that no such institution had ever existed before. Cooper's concern with the problems faced by working women led him to develop and implement the radical notion of coeducation of men and women in all courses. In addition, specific educational opportunities were developed at Cooper Union for women to help them advance into professions which were not completely closed to them at the time, such as design and craftwork, in order to become self-sufficient and support themselves and their families.

The manner in which Cooper Union came into existence is an interesting story, and I will have something to say about it, but Peter Cooper's story is to

me by far the more compelling. His story is an important part of the history of New York City, because of his contributions to the design of the city' infrastructure, its politics, and to public education. But perhaps most importantly, his story is the story of how he led his family and a whole generation of wealthy industrialists to follow a guiding principle of carrying out philanthropy during one's lifetime rather than after one's death, which had not been the case in the United States before Peter Cooper set a new example This was done without the benefit of federal tax deductions for charitable contributions, and during a time when inheritance taxes were virtually nonexistent

As a result of his generosity of spirit and resources, when Peter Cooper died in 1883 at the age of 92 he was arguably the most beloved person in New York City. Hours after his death, word spread throughout the city, its news on the lips of virtually every cab driver; flags throughout New York came to half-mast. His son-in law, Abram Hewitt, planned a private funeral at All Souls (which was at that time located at 20th Street and 4th Avenue), but this quickly proved impossible. Although Hewitt refused to let Cooper's body lie in state at City Hall, as had been requested by the Common Council, the casket was left open for six hours in front of the pulpit. During that time 12,000 New Yorkers filed silently past his casket for a last look at the face they all knew and loved. The Rev. Dr. Robert Collyer, who gave the funeral address, said "Here lies a man who never owned a dollar he could not take up to the Great White Throne." When the coffin was carried down the length of Broadway on its way to the funeral barge which would take him to his final resting place in Greenwood Cemetery, uncounted thousands more filled the streets. Shops closed, financiers and bookkeepers at Wall Street emptied out onto the pavement, and church bells tolled a funeral dirge all over the city. Eulogies appeared in every daily newspaper. In his definitive 1949 biography of Peter Cooper, Edward Mack reflected that "His own generation knew his worth, whether they simply loved him as a man or applauded him for making money or were aware of his contributions as inventor, philanthropist, and defender of democracy. And for a moment they raised him into an idol, a hero of a city without heroes."

Somehow Peter Cooper has fallen from this high state to obscurity, even here in the city he loved. Our children do not learn about him in school. Many New Yorkers have never heard of him unless they have a friend who lives in Peter Cooper Village, or have walked by the Cooper Union and wondered what exactly it was. In short, New York City has lost one of its

heroes, through a lack of remembrance. He has also been neglected in many textbooks. For example, he does not appear anywhere in Bernard Grun's encyclopedic Timetables of History. I believe that by the end of this lecture you will agree that this was an oversight of unbelievable magnitude. This sort of amnesia has not occurred to other wealthy philanthropists who followed Cooper, men with names such as Carnegie, Vassar, and Cornell. When historians have focused on industrialists on the 19th century, they have focused on the incredible power many of these men wielded over their workers, the economy and the government. It is hard not to recall the following quote from Cornelius Vanderbilt: "Law? What do I care about the law? H'aint I got the power?" and contrast this with a quote from Peter Cooper, an equally wealthy individual of the same era, who said: "There is fast forming in this country an aristocracy of wealth, the worst form of aristocracy that can curse the prosperity of any country." And another quote from Cooper: "The production of wealth is not the work of any one man, and the acquisition of great fortunes is not possible without the co-operation of multitudes of men; and...therefore the individuals to whose lot these fortunes fall...should never lose sight of the fact that as they hold them by the will of society expressed in statute law, so they should administer them as trustees for the benefit of society as inculcated by moral law." Cooper was anticipating ideas which would not become common currency for at least a half century. And yet Vanderbilt's name and fame is spread far and wide, while Peter Cooper is quickly becoming lost to us.

Cooper was a wealthy industrialist whose workers never had cause to go out on strike, simply because he treated them fairly. As an example, he left $5000 in his will (which was a lot of money) to an employee who had worked for him for 50 years. He literally devoted his life to building his fortune, caring for his family, serving the public, doing good works and using his fortune to provide others with opportunity. How boring! No wonder he appears in few history books. Such a person did not fit into the classical picture of a preying capitalist in the style of Collis P. Huntington, the railroad magnate who apparently spent over $500,000 a session to buy whole Congresses. And heroes are less interesting than villains.

A word of warning before I go much further: I am a chemist, and not a historian. I am a member of the faculty of Cooper Union's Albert Nerken School of Engineering, and my only qualification for being here is that I have spent my free time ever since my arrival here in 1993 learning about the school and its history. I do not pretend to present to you today the work

of my own scholarship, but rather the careful work of numerous historians, educators, librarians, and journalists whose manuscripts, dissertations and archives I have consulted. So in advance, I hope you will forgive me for any errors which I may make today.

The Young Mechanic

Peter Cooper was born in New York in 1791, during the presidency of George Washington, and was most likely of mixed Dutch, Hugenot, English ancestry. His maternal grandfather, John Campbell, was once Mayor of New York, and deputy quartermaster-general during the Revolutionary War. He was the sixth son of Margaret Campbell Cooper, John Cooper, who also served in the War as a lieutenant. John Cooper was a fairly devout and somewhat dour Methodist who worked sometimes as a hatmaker, others as a brewer originally from Peekskill, who was trying his luck in New York. A poor businessman who extended too much credit to his customers, he eventually moved family back to Hudson Valley (Newburgh) 3 years later, the first of several moves. Although the family was hardworking and not poor, they were never financially secure and the threat of being overwhelmed by debts and therefore sent to prison was constant. This had a profound effect on the young Cooper. In later life Cooper was to operate his affairs, and those of Cooper Union, with the goal of never going into debt if it could possibly be helped.

As a boy, Cooper was active and took part in all sorts of adventures, injuring himself seriously thereby a number of times by taking amazing risks to accomplish some feat, making him a hero to the other boys in the neighborhood. When it came to work at home and for his father, he was constantly turning his adventurous and inventive mind to saving himself as much unnecessary labor as possible. It has been remarked that "Necessity is the mother of invention," but I think that it would be more accurate to add that "Laziness is its father." Cooper was often put to work helping his mother do the laundry, using a barrel filled with soapy water and pounding them with a wooden pounder, which had a large handle. He hated this job, and put his mind to work on how to make the process easier. He invented an efficient hand-operated washing machine which make the process much quicker and more efficient. A wheel, about half the diameter of the barrel in size, was attached to two pounders. Two more wheels were connected to a double lever. A post in the top of one of these wheels connected to the double lever let the user take hold of the pounding wheel and thus work both

pounders at once. By attaching a ratchet, the pounders struck a new place each time, circulating around the barrel. This surely impressed his mother, and also ensured that he would have more time for other chores (ah, well). He also taught himself how to make shoes by taking a pair apart, and made shoes for himself, his sisters and other members of his family.

Because of the family's persistently poor financial state, Peter received almost no formal education, because he was needed to help his father support the family. As soon as he was old enough to do so, his father put him to work picking the fur from rabbit-skins used to make hats. Under his father, he had the opportunity to work at brewing as well as farming, brickmaking, beekeeping and netting and selling pigeons. Peter experienced both the rural life and city life growing up.

Apparently city life held more appeal, because in 1808, one year after Robert Fulton's steamship first plied the Hudson, Peter Cooper returned to New York and apprenticed himself for 4 years to Burtis & Woodward, coachmakers. At that time, New York City's population was 80,000 people, making it rather miniscule compared to cities like London and Paris (with over half a million each). However, the city was fast becoming the mercantile center of the United States, with commerce equal to Philadelphia and Boston combined. The first public school existed, established by the the Free School Society under De Witt Clinton's direction at Madison and Pearl Streets. There were 8 daily newspapers and 10 weeklies for him to read (if he were able). A flood of people coming into the city was resulting in the first real housing shortage, and in 1806 there was a riot on Christmas eve caused by native-foreign hostility. New York was starting to become New York.

During his apprenticeship, Cooper devised the first machine for mortising carriage hubs. This had previously always been done by hand, and Cooper's device became widely used throughout the carriagemaking trade until end of the century. Unfortunately, he never patented the device. Also during this time, he developed a method for using the currents of the East River to generate enough power to operate a ferry. Robert Fulton himself came to observe the device and treated Cooper dismissively, walking away silently. This slight burned in Cooper's craw, and much later in life commented on Fulton's well-known tendency to believe that his own ideas could not be improved on. Although he had no time to spare to attend the free school as he badly wanted to, Cooper hired a tutor to teach him mathematics and other

things during the evenings. His apprenticeship ended in late 1811, and his employers offered to set him up in his own business.. However, he would have had to borrow money (and this was anathema to him), the margins in this business were razor thin (one expensive carriage could, if unsold, bankrupt a firm), and he was deathly afraid all his life of going into debt. Only a few years later, his employers' firm went bankrupt, which only seemed to confirm his decision.

At this time, Cooper moved to Hempstead, LI and joined one of his brothers, who worked for a company making machines for shearing woolen cloth, making $1.50 a day (which was then a very high wage). He quickly learned the manufacturing trade, and when the company failed in 1812, Peter Cooper (with a partner) bought the rights to sell the machines in New York for $375, eventually buying out his partners for $750. The War of 1812 broke out soon after, during which British wool was no longer imported. Demand for domestic woolens skyrocketed, and Peter Cooper profited by about $250 a month from his investment. After this point, Cooper never again worked as another person's employee.

His newfound financial independence gave him enough confidence to propose to Sarah Bedell of Hempstead, and they married on December 22, 1813 at St. George's Episcopal Church in Hempstead. Sarah was the light of Cooper's life. They settled in Hempstead on a nice rural plot, and their first son, John Campbell, is born Sept 5, 1814. A second son, Benjamin Bedell, was born in 1815. They had a quiet, simple life. By their own preference the Coopers had no servants. When Peter came home at night he usually found his wife rocking the cradle, a job which he took over for the rest of the evening. Eventually, the father of invention came to him, and he invented (and patented) the first self-rocking cradle in 1815. It was operated by a pendulum, and it played music and fanned a cloth overhead to shoo away flies. He eventually traded the patent rights to a Connecticut peddler for his horse and wagon and is contents. The cradle was widely distributed throughout Connecticut. Cooper also invented the hand-operated lawn mower to make mowing the grass easier (in keeping with his suburban lifestyle!) which he never patented. It apparently was much the same as modern manual mowers.

In 1814 the war had ended, and Britain's post-war dumping spree started driving his customers, and him, out of the wool business. By 1816, Cooper decided to try cabinet-making and had a lathe built in Hackensack, NJ. In

1817 Cooper and his family moved to New York City. Not long after the move Sarah's brother, Benjamin Bedell who was a grocer, talked Peter into setting up a grocery store in partnership with him. The store opened in 1818 and was apparently located at the Bowery near Stuyvesant Street. This began Peter Cooper 's real estate investments and purchases in that part of Greenwich Village where Cooper Union was eventually built. This also began Cooper's acquaintanceship with the people of the neighborhood, and his own immense popularity.

While running the grocery, Cooper "continued tinkering with mechanical devices". Most notably, in 1820 he "invented an endless chain for drawing Erie canal boats" powered by the canal's currents, and built a life-size model on a nearby canal. He demonstrated the device to Gov. DeWitt Clinton, who was so impressed that he paid $800 for the State of New York to gain the patent rights. However, the scheme was never implemented because of economic impact it would have had on the farmers whose lands abutted the canal. These same farmers had yielded right-of-way in exchange for feed revenues for the horses which would pull barges along the canal. However, he did at last make some money from the idea that Fulton had scorned, which must have been immensely satisfying.

Eventually Peter tired of the tedium of being a grocer. In 1821, he bought a glue factory at Sunfish Pond, near Kip's Bay, from John Vreeland, a grocery store customer. He threw himself into the business, developing new manufacturing techniques and producing the highest quality glues ever made. He quickly became New York City’s main supplier of highest-quality glue, gelatin, household cement, isinglass, and neat's-foot oil. (got) The business initially earned about $10-12K a year; by the mid 1830s, Peter Cooper developed assets of $123,459. In the 1840s the factory was moved to Queens, along the Maspeth Avenue Plank Road. By the 1850s, Peter Cooper was one of only 47 glue manufacturers in the USA and was a millionaire.

Triumph, Tragedy and Hope

No matter Peter's business triumphs, this time was also a time of tragedy for the Coopers. In 1819, Benjamin died of dropsy, and in 1820 John died of the croup. The loss of both their children in the space of a year must have been a devastating blow, but shortly after John's death, Sarah Amanda Cooper was born in 1820. A year after starting his glue venture, another son, Peter William Cooper, was born; and in 1824 another son, Edward Cooper, was

born. All seemed well, but that same year Sarah died of a throat infection, and Peter died of bronchitis, leaving them with Edward as their only child after losing four others. Edward will eventually help to build his father's fortune. In 1830 their last child, Sarah Amelia Cooper, was born.

Two years later, in 1826, Cooper buys a property at the site where 28th Street will eventually meet 4th Avenue, and builds the home in which he and his wife and children lived for a quarter of a century. His growing prominence eventually leads to pressure for him to serve on the city government, and in 1828 he was elected the assistant alderman of the 12th ward (this was all of Manhattan north of 14th street). He immediately turned to a question of public health, which he maintained an interest in the rest of his life. The city's water was becoming increasingly foul. The wells were contaminated from the city's privy-vaults - holding bins behind backyard outhouses - and other sources. So, between 1829 and 1831, Cooper devised an ambitious and expensive plan to change New York City 's water supply from contaminated wells and river water to piped water from Passaic River to Croton, build a dam at Croton and bring water to a reservoir at Murray Hill. This plan was eventually implemented by the New York State Water Commission, and completed in 1841. Thus began Peter Cooper's public service, which continued in one form or another throughout the rest of his life.

Upon his election, Cooper turned his glue business over to be managed by his son Edward and Edward's best friend and partner, Abram S. Hewitt. This friendship turned out to be one of Peter Cooper's greatest strokes of fortune, because in Hewitt he eventually gained not only a son-in-law, but the first president of the Cooper Union. This same year, Cooper also decided to speculate on the proposed new B&O Railroad, and bought 3000 acres of land near Baltimore and began developing the land. While leveling hills and draining swamps, iron ore was discovered on the land. He then set up furnaces and forges in Baltimore at the Canton Iron Works, to prepare selling rails to the B&O.

The year 1830 brought important triumphs to Peter and his family. Their last daughter, Sarah Amelia Cooper was born; she will eventually marry Abram Hewitt. This year, Cooper also was awarded his first of many glue manufacturing patents.

In the same year, 1830, Cooper promised the B&O to help them with a serious technical problem they were having. The locomotive was invented by George Stephenson, a brilliant English engineer who also designed the first iron railroad bridge, in 1814. The English locomotive design needed curves of track with at least a 300-foot radius; the curves needed for the proposed B&O line were 150-200 feet. Stephenson himself averred that it was totally impossible for a locomotive to negotiate so sharp a curve. The only alternative would be costly tunneling and delving. Accordingly, Peter "got up a little locomotive" built from old wheels, musket barrels, and a special small brass steam engine that he had built some years before in New York. This was a special rotary steam engine which he designed to deliver power more efficiently, which had been patented in 1820 and 1828. Despite delays including the theft of some copper chopped from the engine and a wheel which kept breaking off because of being mishandled, in August 1830 Cooper drove his train, the first built in the United States, with a carload of B&O officials from his workshop to Ellicott's Mills, at speeds up to a breathtaking 18 mph. The small but amazingly powerful locomotive was christened the "Tom Thumb." Smelling trouble from the new competition, Baltimore's stagecoach owners insisted on a race. Cooper was winning this race, but at one point the blower died, and although it was quickly repaired the repair was not fast enough to win the race. Still, investors snapped up B&O bonds, and the B&O subsequently bought Cooper's iron rails. In addition, he made a huge profit when he eventually sold his own B&O stock and the real estate near Baltimore he invested in. It seems ironic that in the long run Cooper's refusal to go into carriage-making eventually culminated in his destroying the stagecoach as a form of transportation!

Cooper eventually paid a price for the railway's success. By 1838, the NY and Harlem line had progressed enough to make it possible to travel by rail from City Hall to Harlem, but south of 27th st the trains were horsedrawn (due to a city ordinance to keep the noise, sparks, and smoke out of the downtown). The switches occurred 1 block away from Cooper's house at 4th Ave. and 28th Street, to his great dismay.

A Bare Crust of Bread

Finally, in this same year of 1830 Dr. David Rodgers, a fellow member of the Common Council, told Cooper about the Ecole Polytechnique of Paris, and the sacrifices tradesmen and artisans made to attend classes there. By his own account, it inspired him to someday found his Union.

"What made the deepest impression on my mind was...that he found hundreds of young men from all parts of France living on a bare crust of bread in order to get the benefit of those lectures. I then thought how glad I should have been to have found such an institution in the city of NY when I was myself an apprentice...I determined to do what I could to secure to the youth of my native city and country the benefits of such an institution...and throw its doors open at night so that the boys and girls of this city, who had no better opportunity than I had to enjoy means of information, would be enabled to improve and better their condition, fitting them for all the various and useful purposes of life."

Cooper was also greatly influenced in this by his good friend Joseph Curtis. Curtis was a friend of Cooper's from Hempstead days, and was the one who talked him into serving on the Common Council. It is hard to minimize how important this friendship was in developing the direction in which Cooper's life would turn. Curtis was 9 years older than Cooper, and in many ways was like Cooper's father; worked at many businesses unsuccessfully, often close to the poverty line. One might think that Cooper's distaste for the way his father handled his affairs might have extended to Curtis. However, Curtis was simply more interested in charitable affairs than business, and he often neglected the latter in favor of the former. He took Cooper with him to the House of Refuge for Sunday visits, and to tutor classes for African Americans in Flatbush. They both served on the board of the Public School Society. They also eventually joined the Second Unitarian Church together in approximately 1838. The Second Unitarian Church was led by Dr. Orville Dewey. One Sunday Cooper and Curtis were taking a walk together when they happened to come across Dewey giving a sermon at the church's temporary home at Stuyvesant Hall. "Let us go in here and see what *this* is," Dr. Dewey quotes one of the pair as saying. "When they came out, as they both told me, they said to one another, 'This is the place for us.'" In 1855 Cooper moved to All Souls Church, which was near his new Lexington Avenue home. Cooper remained a Unitarian for the rest of his life. It is hard to describe the immense spiritual satisfaction Cooper derived from his newfound faith, except perhaps through Cooper's own words: "I say that God is love, and that love must use all its power through all eternity to accomplish the greatest good to the greatest number." And there was much good that needed to be accomplished. Life was hard in New York in those days for most people, despite the economic boom.

As material life got better for the rich, it got that much worse for the poor. Thousands of craftsmen and artisans were needed to do the commercial building that accompanied the transportation boom, precipitating a housing shortage. Landlords became rich by simply packing more and more people into existing buildings and letting their buildings fall apart, which lowered their taxes and increased their profits further. There was not much incentive to develop new low-income housing. According to Burrows and Wallace's recently published Gotham (which I highly recommend to you) New York City quickly became "the filthiest urban center in the United States; Boston and Philadelphia gleamed by comparison." There was little garbage collection. Heaps of mud, trash, industrial waste and manure were piled in the streets, formed a "stinking mash labeled 'Corporation Pudding' by a disgusted citizenry." Roving herds of scavenging pigs fed on the mash (and added to it). Excrement stored in vaults behind houses often eventually oozed out and into others' homes (assuming that the privy didn't just overflow into the street). When properly maintained, these were emptied by "necessary tubmen" who either dumped into the river or delivered the waste to fertilizer dealers. Sewers were for water only, not waste. As mentioned previously, the city wells became brackish due to seepage. Water became a scarce commodity and "pure country spring water" (which was not very pure and not necessarily from a spring) was for sale from carters for a penny a gallon. The wealthy got water from Westchester, stored in a municipal reservoir built in 1829, a huge cast iron-tank (>300,000 gallons) at Bowery and 13th street. It was an expensive, annoyance to them, but not a serious problem. Then cholera hit in 1832 (after first hitting Asia, Poland, France, England, Canada, and Ogdensburg) and the slums got hit very, very hard. A New York Board of Health existed, but it was dedicated to commercial interests and did nothing. Doctors went into action. The Medical Society made recommendations; the city responded with apathy. Half the city fled; of those who remained, more than 3000 died. It is fair to characterize many of the upper class by an attitude of: "Who cares if the sinful poor die, while the virtuous wealthy thrive? This will pass."

After a second wave of cholera in 1834, which Philadelphia avoided through sanitation, public water was approved in 1835. Then a fire destroyed Manhattan south of Wall Street and east of Broad, almost completely, (because of a lack of water to fight the fire). The fire had a strong effect on Cooper, who insisted that the Cooper Union building be completely fireproof, made of iron and stone and not of wood. The fire acted as a wakeup call and sped things up considerably, and the New York State Water

Commission took over the project from the city. As we know, the project was completed in 1841. It would have been finished sooner, but progress was slowed considerably by the Panic of 1837. The Panic was precipitated by a big drop in cotton prices, exacerbated by English banks' refusal to continue their previous practice of granting huge lines of credit to NY wholesalers. The interest rate shot up to 24% as capital dried up, and a severe depression followed. But Peter Cooper did not participate in the huge speculations that many others did following the fire, and so his fortune was saved.

In 1848, Cooper earned a patent for the manufacture of gelatin of such purity that it can be dried, powdered, boxed and used for making desserts (Hewitt once said that "it is impossible to tell where glue ends and gelatin begins"). The company then tried to find ways to get Americans to eat more gelatin. Sarah Cooper set to work and developed a recipe for fruit-flavored gelatin, as well as a number of other recipes which appear on the box. The product is modestly successful, but never does as well as the factory's other products. This patent was eventually bought by a businessman named Pearl Wait in 1898, who invented the Jell-O trademark and marketed the gelatin in pre-flavored form, with somewhat greater success. Thus in a very real way, Peter and Sarah Cooper can be said to be the inventors of Jell-O.

Cooper's continuing interest in invention and innovation did not abate his sense of responsibility for public service. He continued to serve on the board of the Public School Society, which was a private nonprofit in charge of the public schools. The Coopers sent their own children to public school #15, at 27th Street and Third Avenue, while also educating them vocationally at home. He was elected again to the Common Council in 1840, running in opposition to a man who wanted some public school funds to be turned over to Catholic schools, which had petitioned the city and state governments on the grounds that they were unable to send their children to secular schools. He eventually turned over control of the Public Schools to the City of New York in 1853. In 1842 John Grisholm, a Quaker physician, issued a scorching report on sanitary conditions and recommended a number of laws, including the establishment of health wardens. The report is widely ignored. However, a few years later, Cooper put together a fund to publish an expanded version of Grisholm's study. Today, the study is considered to be a landmark in the literature of public health. Sarah Cooper was also involved in public health issues and may have been a driving force behind much of her husband's activity. Much later, during the Civil War, she helped to

organize the Women's Central Association of Relief for the Sick and Wounded of the Army. Louisa Lee Schulyer, member of All Souls, quickly became the key organizer, but Sarah's presence on the committee lent the weight of Cooper's name to the effort. They provided an important impetus to the development of significant medical resources for the troops during the War.

The situation in the city was becoming critical during this period, and not only with respect to sanitation but also with respect to the city's children. In the late 1840s children under 15 constituted almost 1/3 of the city's population, similar to London (32%) but much greater than Paris (20%). No apprenticeships anymore, so kids were often sent into unsupervised jobs in the street. There were literally thousands of vagrant children. The city's response was a vagrancy law passed against children between 5 and 14, which packed them off to prisons and reform houses. In 1853, 25,000 homeless people were sheltered over a 6-month period by police dept in precinct houses.

This problem inspires the educational reform movement, which sweeps the city. In 1846 Townsend Harris, a prominent merchant, proposed establishing a free college for public school graduates for studies "relevant for the 'active duties of operative life,'" not classics like Columbia (which was where the sons of wealthy families went) or New York University (which was more middle class). A year later, a Free Academy was authorized by the state legislature, conditional on a referendum (this condition was imposed under political pressure from Columbia and NYU alumni). The referendum passed overwhelmingly, and in 1849 the Free Academy (later to become City University) opened. Sadly, the success of the Free Academy was extremely limited in extending education to the lower class; most sons of lower-class families quickly dropped out, because the classes were all held in the daytime and all students were expected to study full-time. In the end, the vast majority of graduates were sons of professionals and were of British, Dutch and Hugenot descent; the school was not reaching the children who need it the most (for example, recall that the Great Irish Potato Famine occurred in 1845). And no women were admitted to the Academy until Hunter College was founded some 20 years later. Peter Cooper watched all of these mistakes, and learned. For he was still working on his on plans, plans which had begun in 1830 and were slowly taking shape in the form of purchases of plots of land at the top of the Bowery.

Foundation

By 1848, Cooper had become the leader of the Public School Society. At this time he helped set up the first evening classes for adults and children in the public schools. By 1856 nearly 15,000 people (4,000 women, in separate classes) were enrolled, and the first adult education program in America became a huge success. But this was not enough for him. In 1850 the family moved to Gramercy Park, with Cyrus Field, James Harper and George Templeton Strong for neighbors. There he lived frugally; dressed simply, limited family to 2 servants, and drove a simple one-horse carriage, continuing his plans. In 1852, he bought the last part of the block where his dream will be built. The New York Times then announced that Peter Cooper has appropriated $300,000 for the purpose of building an institute of learning dedicated "To Science and Art" for the citizens of New York at the top of the Bowery. In 1853 the cornerstone was laid by Peter Cooper and the Mayor of New York City, and construction commenced. It should be noted that the laying was not merely ceremonial; Cooper laid on mortar with a will, and with an experienced hand that would steer the entire construction, supervising every detail and designing the mechanical infrastructure, including the most efficient and effective ventilation system ever devised. He also included a cylindrical column for an elevator, which he had recently seen demonstrated but had not come into commercial use as yet. The column was eventually filled with a square elevator, until a major renovation in the 1980s saw the installation of the cylindrical elevator that Cooper had imagined.

As Cooper supervised every detail of the building's construction he also continued to pursue politics as well as business. By this time Cooper's name had become synonymous with integrity, thrift and efficiency in public service in the minds of most New Yorkers, although many wealthy citizens thought his Union was destined to fail. In 1853 Cooper became President of the City Reform League, and leads the Reform movement in New York City for the next 20 years. The league succeeded in changing the City charter to reduce aldermanic powers, and backed reform-minded party candidates for office. Most of Boss Tweed's allies were eliminated in the 1853 elections as a result of the Reform efforts. Then in 1855 Tweed's candidate, Fernando Wood, was inaugurated as mayor. However, he made a surprise announcement of his intention to implement nearly all of the proposals Peter Cooper and other reformers advocated, cleaning up the city and establishing a strong city university system. To a large extent he carried out these

promises. Accordingly, Cooper used his wealth and influence to back Wood up in these endeavors on several occasions in 1856. However, Wood's handling of civic unrest in 1857 following the Panic eventually cost him Cooper's support.

It is worth pausing here to note the makeup of the city at this point in time. According to the1855 state census there are 630,000 people in the city, only 215,000 of which were gainfully employed. Half of the city's residents were born in other countries; 176,000 Ireland, 98,000 Germany, 37,000 from Engalnd, Wales or Scotland. In 1856 only 9,122 people assessed for taxes had a net worth of more than $10,000. Half were merchants; landlords and real estate magnates made up 1/5; 1/5 were manufacturers (like Cooper); 1/10 were professionals. The remaining few were "old money." Manufacturers tended to be antagonistic to merchants, and merchants and professionals looked down on manufactures as socially inferior, even “grubby.” Thus there was class antagonism among even the elites, and the gap between "haves" and "have-nots" was enormous.

In 1854, a shallow plateau was discovered beneath the Atlantic between Ireland and Newfoundland. Cooper quickly teamed up with Cyrus West Field, a retired paper manufacturer (at 34!) living in Gramercy Park, as well as Abram Hewitt, Moses Taylor and Samuel Morse, to set up the New York, Newfoundland, and London Telegraph Company. They built a telegraph connection between Newfoundland and Nova Scotia and continued to expand, with the ultimate goal of establishing a transatlantic cable to London. In 1855 Field, Taylor, Cooper & Hewitt founded the American Telegraph Company (eventually to become AT&T) and swallowed up smaller lines in the US, including Morse's. By 1858, they stretched from Maine to Mexico and were the largest in the east, rivaled in size only by Western Union. Despite the Panic of 1857, which Cooper and his new company again weathered successfully, in 1858 the first transatlantic cable completed, and Queen Victoria sent President Buchanan a congratulatory message. Thus Cooper initiated the global telecommunications network. In fact, some might say (although not too seriously) that he invented the Internet!

In 1854 Cooper opened a new factory at Trenton, NJ, where all steps in ore processing and production took place in one huge complex. Managed by Abram Hewitt and Edward Cooper, the first structural iron beams for fireproof buildings were rolled here, using the Bessemer process. These

beams were eventually used to build Cooper Union, now considered the prototype of the modern skyscraper, and the first fireproof buildings (for which Cooper was awarded the Bessemer gold medal in 1870). As an aside, an interesting story can now be told: Cooper set aside an allotment of beams for use in the construction, but the allotment was sidetracked by Andrew Carnegie, who pleaded with his friend Peter Cooper to sell it to him to meet a deadline for a project. Cooper agreed, but only if Carnegie would promise to make a contribution in the future to his Union. Carnegie eventually made a single donation of $600,000 to the school after Cooper's death, upon the condition that the donation be matched by the Cooper-Hewitt family. The family dissolved the trust which Cooper had left for the benefit of his grandchildren, selling a piece of real estate in midtown Manhattan at a significant loss to generate enough cash. That plot is where the Chrysler Building now stands. After Carnegie's death, his own heirs decided that an injustice had been done. By this time the land had come into their hands, and they gave it to Cooper Union. The school derives its principal income from the rent as well as the property taxes on the building, which the city collects and turns over to Cooper Union. Once the school derived its principle income from renting out its lower floors as retail and manufacturing space. These donations allowed the entire building to be used for educational purposes.

In 1858 the construction of the building was at last completed, and the doors first opened in May 1958. Not including the cost of the land, Peter Cooper spent a total of $630,000 for building and demolition costs. The Great Hall was now available for public lectures on science, government and other topics, and any group who paid the modest rental fee could use it for political rallies, and meetings. The Women's School of Design opened in this year. A charter was submitted to the state legislature to establish "The Union for the Advancement of Science and Art." as an educational institution, and permission is sought to award degrees and certificates in engineering and science. In 1859, the state legislature revises only one thing in the charter before its approval, renaming the institute "The Cooper Union for the Advancement of Science and Art" over Peter Cooper's objections. The Cooper Union opened for classes in November, with inaugural speeches given by Cooper and John W. Draper, the President of NYU. Cooper had originally hoped that all the governors of the northern and southern states would attend to dedicate the building to Union; one sees from this that the name of the institution was colored by the storm of the Civil War brewing on the horizon.

Abram Hewitt, Peter's son-in-law and the only member of the family with a college education, was its first president. Hewitt organized its education programs in such a way as to meet his father-in-law's wishes as closely as possible. He was much more conservative than Cooper, and was often opposed to his political and social ideas (he even worked against Cooper's eventual run for the Presidency), but he staunchly supported Cooper's philosophy of education. Open-admission night classes were established for qualified students in chemistry, physics, mathematics, machining, drafting and mechanics; those lacking rudimentary knowledge were sent to the public evening schools. An overwhelming number of people (more than 2000) immediately signed up for the program, though over 600 soon dropped out due to the rigorous program of study. Thomas Edison enrolled in several classes at Cooper Union to help him with various devices he was working on; these were the only college-level courses Edison ever took.

Women and men were educated together in all courses, although 95% of students were male, which shocked many New Yorkers. In response to objections to coeducation, which did not even exist yet in the public schools, Hewitt said several years later that "there will be found evil-minded people everywhere, even in churches, but in six years we have not had a single case of scandal in Cooper Union and we should as soon think of excluding the young men as the young women." The daytime Women's School of Design taught engraving, lithography, drawing, and china painting, and its graduates found work as teachers and artisans. Unlike other libraries in the city, which only kept daytime hours, Cooper Union's Reading Room was kept open until 10PM, making it accessible to working people. Discrimination on basis of religion was expressly forbidden by the deed of trust, earning the praise of the Catholic educators who had been Cooper's opponents in the public schools struggle.

The Great Hall quickly became the city's most important political forum, because it was available to all regardless of the controversy engendered by the groups and speakers who spoke there. The most well-known example was Lincoln's 1860 "Right Makes Might" speech at CU, sponsored by the Young Men's Central Republican Union of New York City. The speech was originally scheduled to be held at Plymouth Church in Brooklyn, but CU had already become an important political platform. New York City cast 48% of its votes for Lincoln, and he carried the state. Lincoln believed later that this speech made him President. Over the years, other speakers have included

Horace Greeley, Frederick Douglass, Mark Twain, Susan B. Anthony, Gloria Steinem, William F. Buckley, Greg Louganis, Christo, and President Bill Clinton. The hall became a haven for labor groups, abolitionists, civil rights groups and supporters of women's suffrage.

Riots, Smallpox and Greenbacks

Although Cooper made daily visits to the Union for the rest of his life, he turned his attention to political and social changes. In 1863 a four-day long Draft Riot sets off in Manhattan; 6000 troops eventually restored order after bloody battles, murders of African Americans, and looting of wealthy men's property (who could pay to be excused from the draft). In the wake of the Draft Riot, a Citizens Association is founded, with Peter Cooper as its first president. Why Cooper? He was at this point universally trusted and beloved by every honest person in the city. Members of the association crossed all party lines. The CA worked for housing legislation to deal with overcrowded tenement conditions, where the rioters lived. This was counter to the existing Association for Improving the Condition of the Poor, which believed that the riots proved that a "dangerous class" existed in New York City whose condition would only be improved through the "moral and physical elevation of these ignorant, semi-brutalized masses." - James Brown, president and banker. However, in 1865 a group of militant physicians, appalled at sanitary conditions, form a Council of Hygiene and Public Health, making a block-by-block survey of conditions and issuing a 500-page Sanitary Report in June 1865. 1500 cases of smallpox were discovered in this survey, with death rates higher than London and Philidelphia. Cooper's Citizens' Association set about distributing 2 million sanitarian tracts throughout town, held many public meetings, and introduced a new health bill to the Legislature. The bill proposed an independent commission of experts be set up and given powers to clean up the problems. This was blocked by municipal bureaucrats, politicians and property-rightists, but in 1866 the cholera epidemic in Europe induced Albany to create a Metropolitan Board of Health and give it extraordinary powers. This is the first such body in the United States, and was established based on the Association's earlier recommendations. Vast amounts of filth and manure were removed; slaughterhouses cleaned up; the water supply improved; and milk standards improved. Deaths (<500) became only 1/3 those of the 1849 epidemic despite a 33% increase in population. In contrast, Cincinnati lost 1200 people; St Louis lost 3500. In 1866 Albany enlarged the New York City Department of Buildings and created the nation's first comprehensive

building code, and in 1867 the Tenement House Law was passed, based on London's 1848 Lodging-House Act. The Citizen's Association met with complete success in all of its goals.

Sarah Cooper died in 1859, after 50 years of marriage to Peter Cooper. After losing the woman he so deeply loved, he rededicated his efforts to public service and to his Union. His public activities centered on his constant presence in meetings of the reform coalitions, and eventually culminated in his unsuccessful run for the Presidency as the draft candidate of the Greenback Party in 1876. This run was largely symbolic, as Cooper had no hope of actually winning, but he felt that someone had to take a stand against a Congress which constantly legislated in favor of the wealthy and failed to issue enough cash to insure the growing country's prosperity, and an executive which did not protect all segments of the American people. Today we have a government which supports a government-controlled currency backed by long-term bonds rather than precious metals, we have federal programs for the unemployed...many of Peter Cooper's campaign planks have in the end become reality.

A Legacy

In total, before his death in 1883 at the age of 92, Cooper donated more than $1.5 million (real) dollars to his institution, and after his death he bequeathed another $155,350. Edward Cooper and the Hewitts added another $100,000 to this amount, and spent another $315,000 to improve the foundation of the building. In 1897 Peter Cooper's brother William bequeathed $340,000 in his will. These contributions from the family were followed by John Halstead, who left the school $250,000 in his will, and H.H. Rogers, who gave the school a gift of another $250,000. These, combined with the gifts from Carnegie and the additional gifts from Cooper's family, endowed the institution well enough to ensure its financial stability after Cooper's passing. Although Cooper spent his entire life building and endowing the Cooper Union, it could never have survived his passing if others had not been inspired by his vision and his dedication. In particular, his family divested themselves of a vast fortune in order to help assure its success.

In the end, what can be learned from Peter Cooper? I believe that I have learned that what made Cooper remarkable was not that he did good, but that he did as much good as he could, for his family, his city and his nation. If we

all really did as much good as we could do, the world would be a very different place. And although many New Yorkers have forgotten Peter Cooper, his legacy lives on in his farsighted deeds and his words, with which I leave you:

"My hope is that the love and desire for scientific knowledge will cause unborn thousands to throng the hall of Cooper Union to learn the beauties and to obtain the benefits provided in nature for the use and elevation of mankind...I trust the young will here catch the inspiration of truth in all its native power and beauty and find in it a source of inexpressible pleasure to spread its transformed influence throughout the world."

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