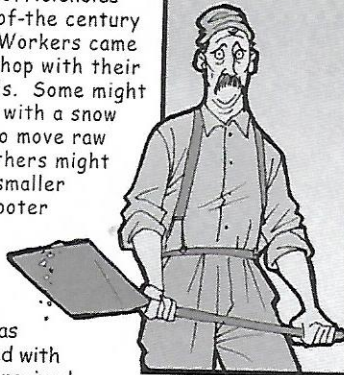


1908 - Ford debuts Model T first passenger flight on airplane
 1909 - William Howard Taft becomes 27th U.S. president Indianapolis 500 race track opens
 1910 - British miners strike 8 hour work day/ China ends slavery
 1911 - *The Principles of Scientific Management* published
 1912 - Titanic sinks/New Mexico and Arizona become states
 1913 - 16th Amendment (Federal income tax) ratified
 1914 - World War I begins

In fact, these words were spoken by Frederick Winslow Taylor, a mechanical engineer at the turn of the century.

His classic book, *The Principles of Scientific Management*, was published in 1911, a year before Harvard founded its graduate school of business.

Taylor noticed great inefficiencies in turn-of-the century shops. Workers came to the shop with their own tools. Some might show up with a snow shovel to move raw iron. Others might bring a smaller sharpshooter shovel.



Taylor was concerned with poorly conceived "rules of thumb" managers and employees used to carry out tasks. To combat this practice, Taylor used early film technology to conduct time studies.



He wanted to examine the most efficient methods for performing such tasks and provide a systematic means to establish scientific "principles" that should guide production.



Did you know the phrase "rule of thumb" comes from an old British law that allowed a husband to beat his wife as long as the stick was no thicker than his thumb?

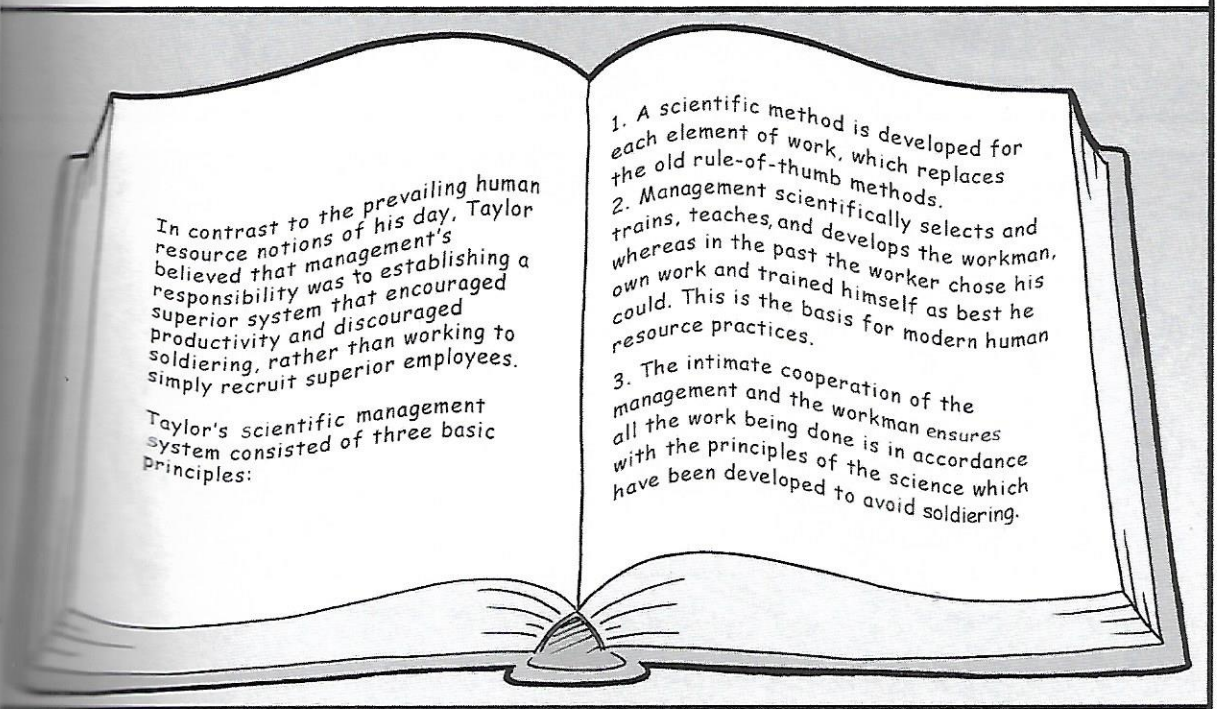
I'm not sure if I should be impressed or disturbed that you know that!

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Taylor was also concerned with employee "soldiering": a term used when workers systematically collaborated to reduce output by agreeing to work at a certain rate that was less than optimal. Researchers today continue to study the problem of "rate-busting," and this work was also foundational to research in groups.

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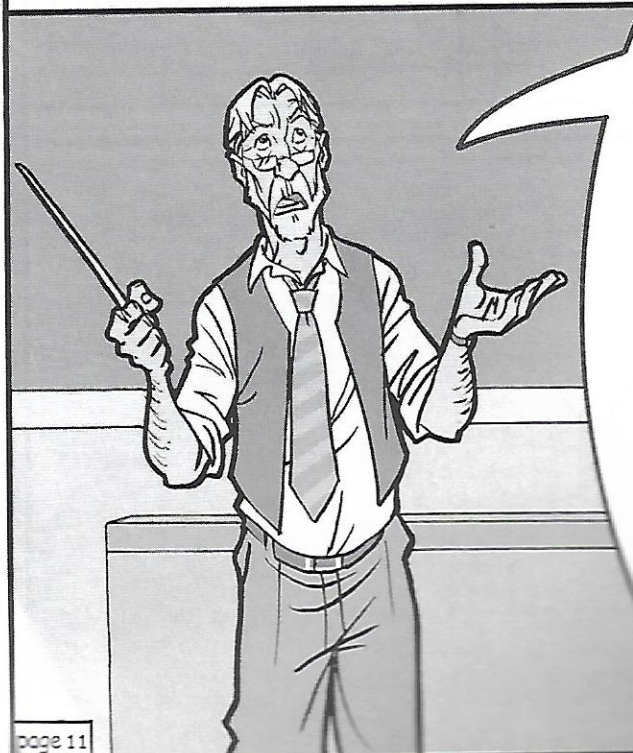
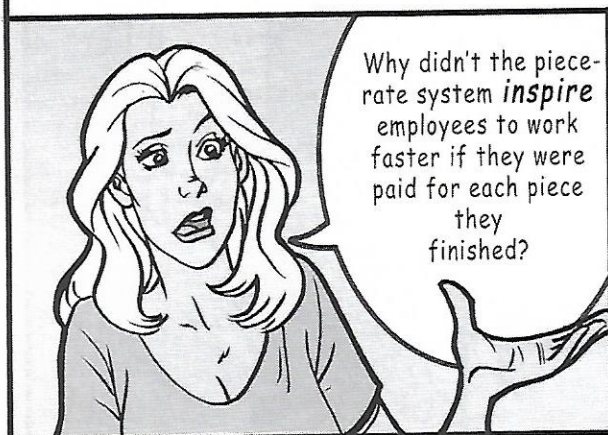


...was said to have saved
 industry a million dollars a
 hundred years ago.



Taylor's system also offered higher wages for workers than the old piece-rate system.

Taylor received widespread publicity for his system and he testified before a congressional investigation to defend the scientific management system a number of times between 1911 and



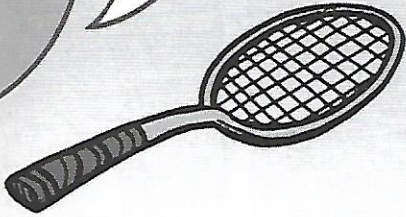
Under the piece-rate system, workers became increasingly skeptical about the motives of their employers. They suspected, usually correctly, that if they increased their production they would be paid less for each piece produced because managers would calculate an optimal number of work that should be completed each day and adjust their rates accordingly.

So, even under this system soldiering occurred. Taylor's system sought to alleviate this problem for both the employee and employer.

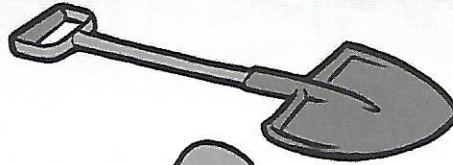


Taylor applied his system to improve efficiency in a number of arenas. He was an avid sports enthusiast, and Taylor's inventions ranged from aspects of organizational functioning to any operation that would save an individual time.

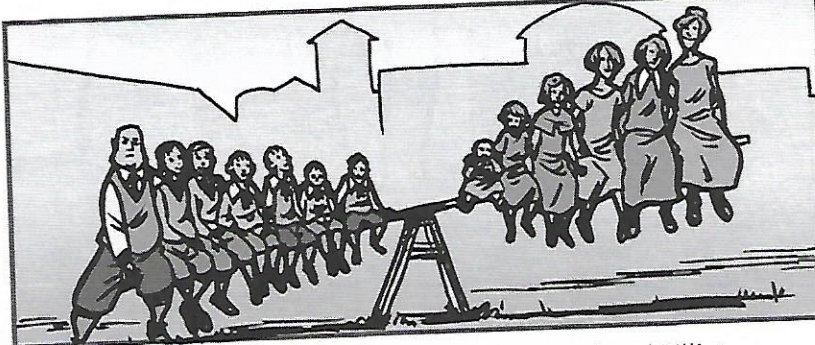
Taylor won the U.S. Lawn Tennis Association Doubles Championship with the spoon-shaped racket he designed.



He created a shovel designed to handle the optimal load, which he determined was 21 pounds.



He developed a y-shaped putter for golf.



Management consultants also achieved fame in the early 1900s. For example, Frank and Lillian Gilbreth were a husband and wife team. They were known for applying efficiency principles to their large family, made famous in the book *Cheaper by the Dozen*, written by two of their 12 children. I should add that their adaptation was not the version with Ashton Kutcher, to save some of you from late night-rental

When he was 17, Frank Gilbreth was set to become an apprentice bricklayer, but he noticed that there were great inconsistencies in the ways that others laid bricks.



The masons who taught him did the work differently than the way they demonstrated,...



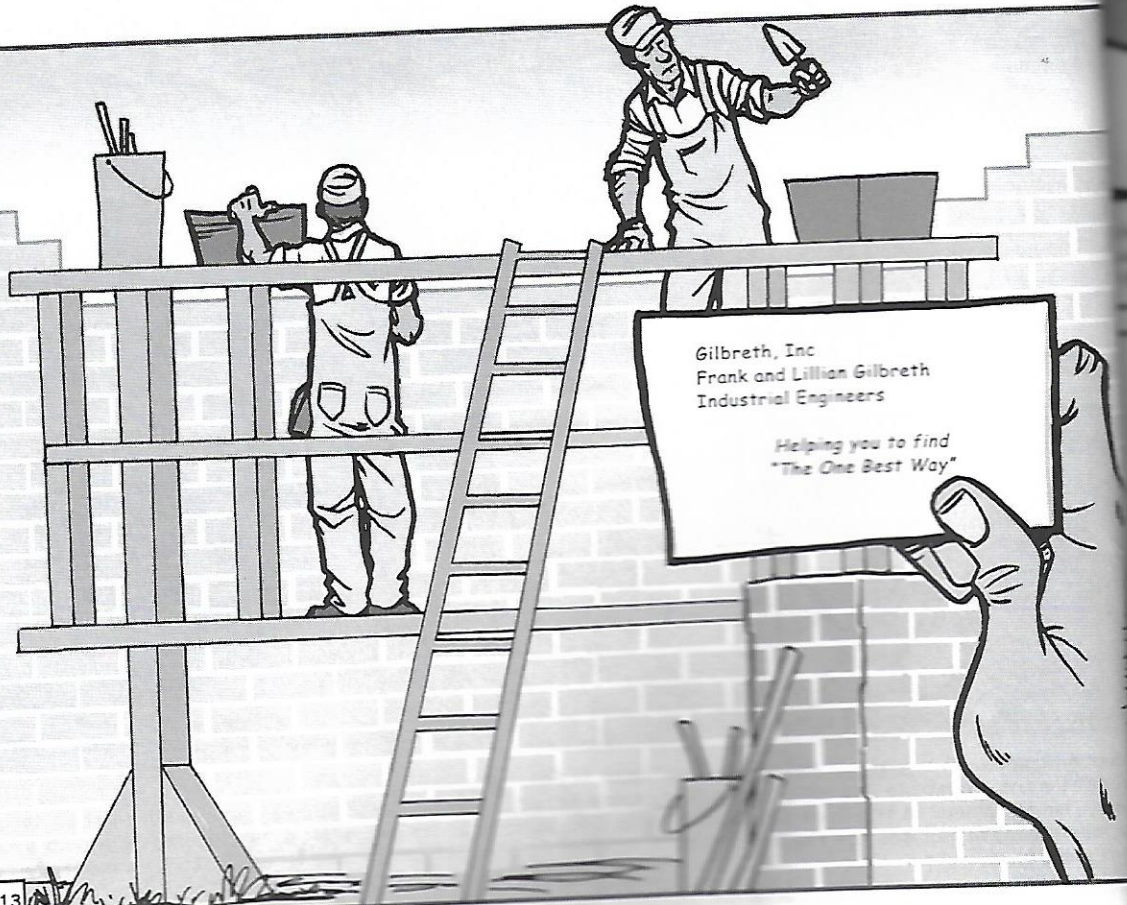
...differently when employers were watching,...



4:30.
Time to start wrapping this up!

...and differently when they were trying to work faster.

Gilbreth determined there must be a single best way to lay bricks. He developed a scaffolding system, systematized the way tools and materials were used, and trained workers to reduce the number of motions they used from 18 to 4. These methods nearly tripled the number of bricks laid daily without exerting any more effort on the part of workers. Gilbreth actually adopted "*the one best way*" as his business slogan.



Like Taylor, Frank Gilbreth was also obsessed with practical applications of scientific management, and he applied his techniques for time and motion studies to all realms of life.

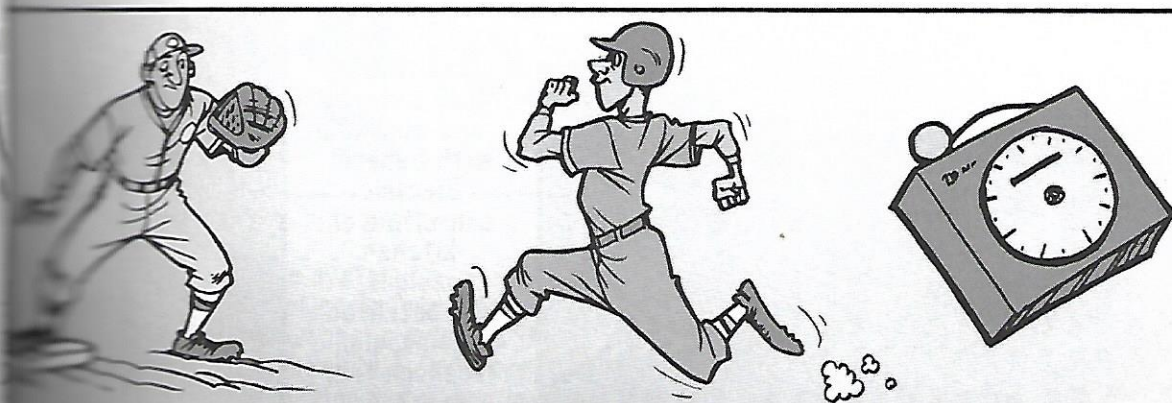


The Gilbreth method involved using early motion picture technology to record various methods for performing tasks. A clock was always included to allow for easy comparison when the films were viewed later.



He found he could button his vest four seconds faster when he started at the bottom than when he started at the top.

He found he could shave more efficiently using two razors, but the additional time needed to bandage cuts outweighed the benefits of the speed in shaving.



He filmed a professional baseball game and observed that after the ball left the pitcher's hand, it only took 2.8 seconds for the catcher to relay the ball to second base. He deduced that even with an eight-foot world class sprinter could steal second successfully. This study was later used to teach soldiers how to throw hand grenades!

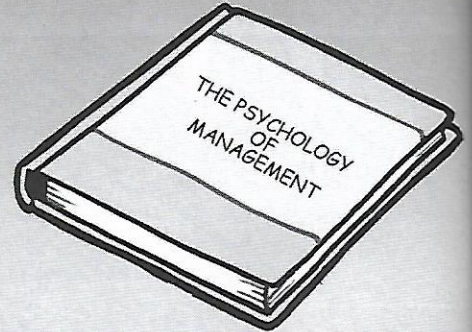
When examining the high number of deaths that were common for surgical procedures at that time, the Gilbreths noticed that doctors often took more time searching for surgical instruments than actually performing the procedure. This, of course, led to increased risk of infection.



It was their idea to implement a technique where the doctor calls for the appropriate tool, which now sits on a nearby table waiting to be handed to the doctor by a ready nurse.



When Frank died, Lillian took over the consulting business. She was a great success in her own right, earning a Ph.D. from Brown University.



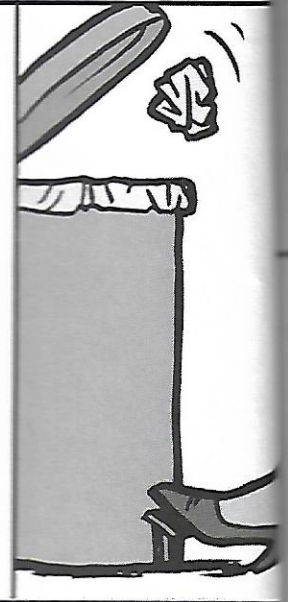
She had actually completed a dissertation at Berkeley, but she was denied the degree when she failed to meet the one-year residency requirement.



Man, and I thought I was having trouble getting classes and finishing my degree.

Most of that comes from you being in *Cancun* during registration.

She also consulted for Macy's stores and worked with General Electric consulting on kitchen designs; she patented the popular trashcan that opens via foot-pedal.



Like many successful entrepreneurs today, one of the keys to success for Taylor and the Gilbreths was their superior implementation of technology.

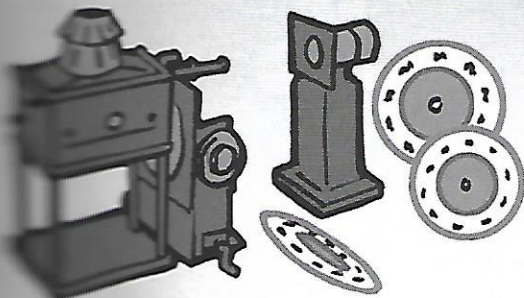
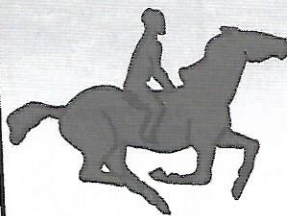


To better track human movement, both Taylor and the Gilbreths embraced early motion picture technology, developed by Eadweard Muybridge.



Muybridge began his photography career with landscapes of San Francisco and Yosemite.

But he began his film career when he was commissioned by California Governor Leland Stanford, namesake of the well-known university, avid gambler, and horse racing track owner, to settle the question concerning if horses ever "fly" - that is, is there a point where all of their hooves leave the ground at once?



By the way, Muybridge concluded that a horse **DID**, indeed, "fly."

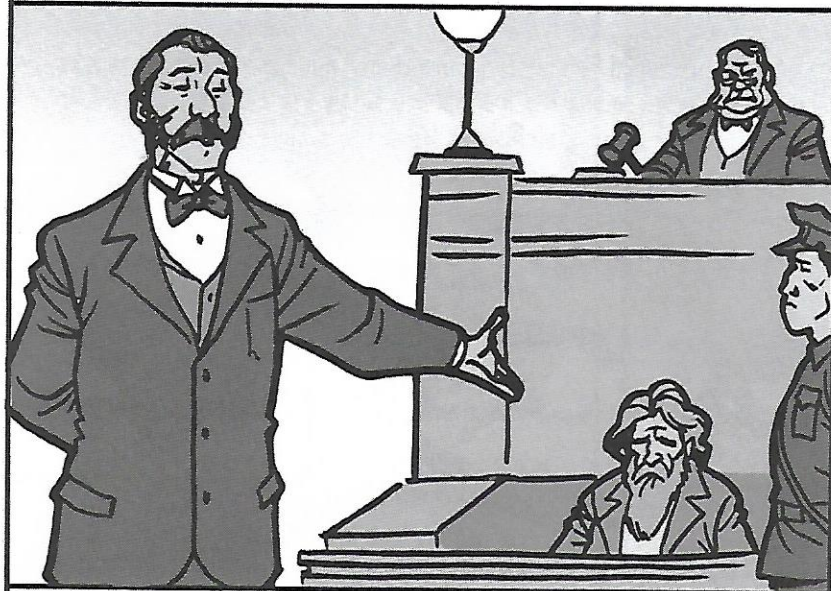


Muybridge developed a system of photographing fast motion-images and invented the Zoopraxiscope, a machine that projected images so the public could see realistic motion. Muybridge is to this day considered "The Father of the Motion Picture."

As a side note, not unlike the industry he pioneered, Muybridge's personal life was also larger than life. He discovered his young wife, Flora, was having an affair with a Major Harry Larkins.



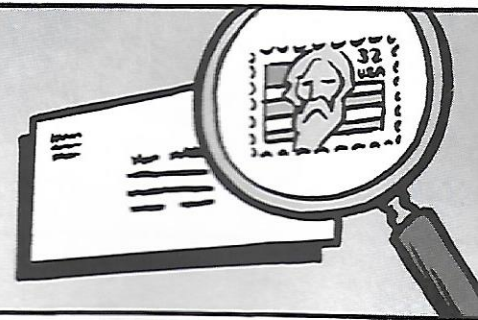
Muybridge tracked Larkins down and greeted him with the message "Good evening, Major, my name is Muybridge and I have a message for you from my wife."



Muybridge shot and killed Larkins, and immediately took one of Stanford's best lawyers to defend Muybridge.



Accounts differ as to whether Muybridge was acquitted on insanity or justifiable homicide, but he was able to continue his work, and his legacy remains.



In fact, another tie between Lillian Gilbreth and Muybridge is that U.S. postage stamps were made to honor each of the contributors to management history.

Of course, advances brought about with technology are always accompanied by critics. In the same year Taylor published *The Principles of Scientific Management*, he engaged in an editorial debate with Upton Sinclair, whose book *The Jungle* led to the establishment of the Food and Drug Administration.



The Jungle chronicled poor work conditions in turn-of-the-century meatpacking plants.

Sinclair was undeniably the most vocal critic of his day. He felt that Taylor's methods exploited the worker since they increased efficiency by over 350 percent, but increased pay by less than 20 percent.

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You know, that's why he wrote that song "EIGHT DAYS A WEEK," to get more productivity out of his workers.

That was John Lennon, you dope.

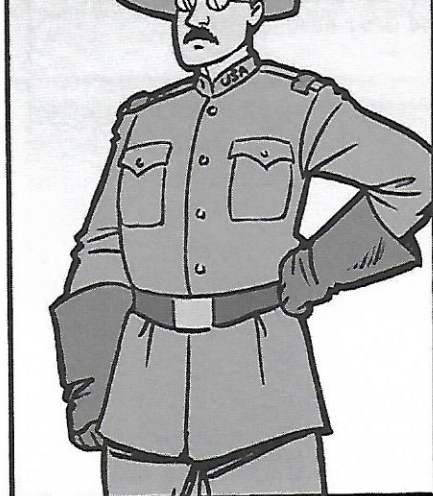


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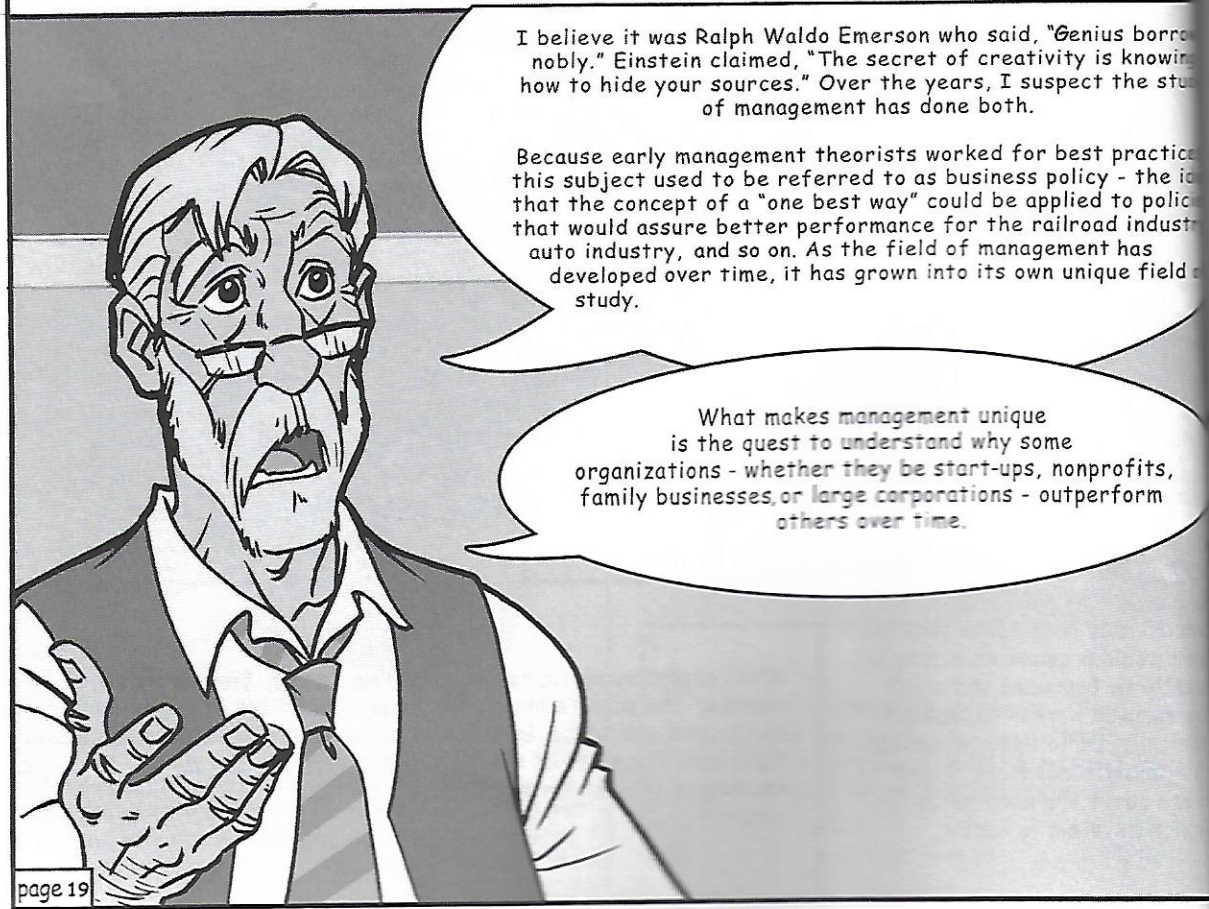
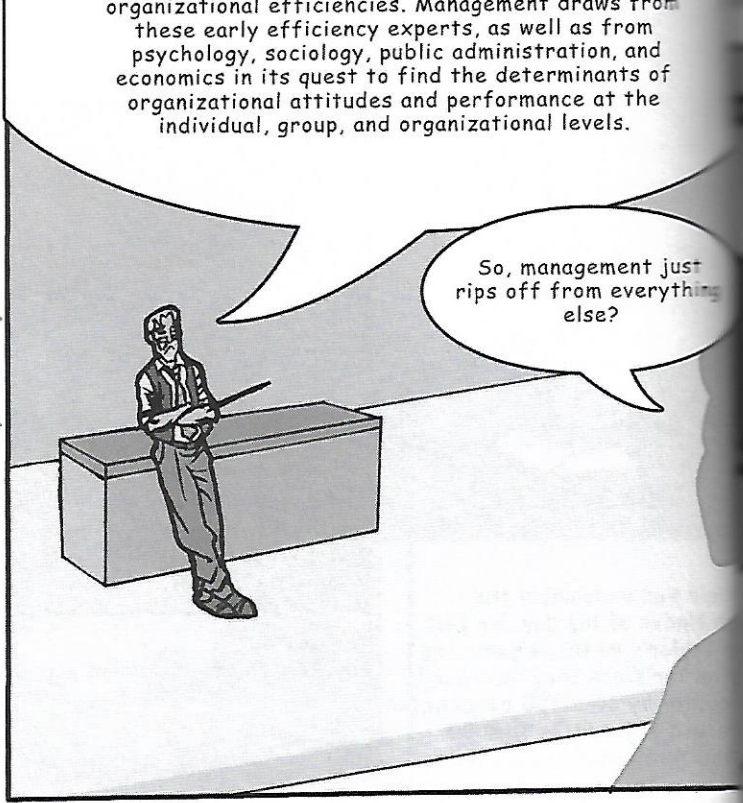
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The Jungle was actually written to promote socialism - and Sinclair may have hoped that the book would promote an outcry to reform factories and uplift the common worker. Somewhat ironically, Lenin was a proponent of scientific management and believed in the need to apply Taylorism to Russia.

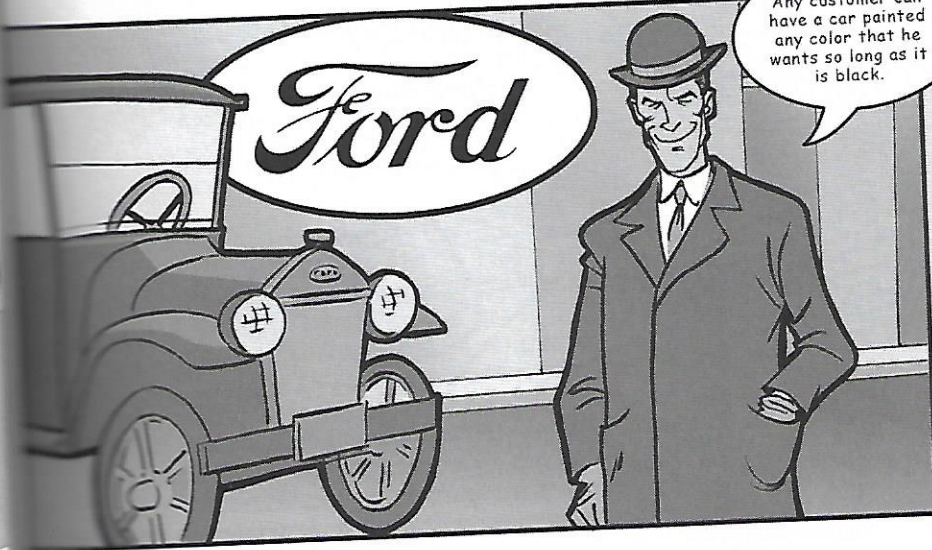
When assessing public response to *The Jungle*, Sinclair noted, "I aimed at the public's heart, and by accident I hit in the stomach." In the end, capitalism largely won out over the socialistic ideas that were prevalent at the turn of the century, but many challenges evident then remain with us today.



In the introduction to *The Principles of Scientific Management*, Frederick Taylor quotes Teddy Roosevelt, who once remarked, "The conservation of our national resources is only preliminary to the larger question of increasing our national efficiency."



World War II saw the beginning of a shift from business policy to business strategy. A new competitive landscape emerged where multiple strategies within a given industry could be successful, rather than relying on a single policy that always led to superior performance.



For example, the success of Ford's early autos was due to efficiencies in mass production gained by creating a limited number of models. In many industries, it was thought that a single policy, much like a recipe, could be followed to guarantee success in a particular industry.



1945
WWII ends

1947
Chuck Yeager breaks sound barrier

1950
Credit card invented

1952
Ray Kroc buys McDonald's

1958
Modem invented

1962
Audio cassette invented

1967
Handheld calculator invented

1972
Word processor invented

1979
Cellular phone invented

1984
Apple Macintosh invented

1989
Berlin Wall falls

1990
World Wide Web created

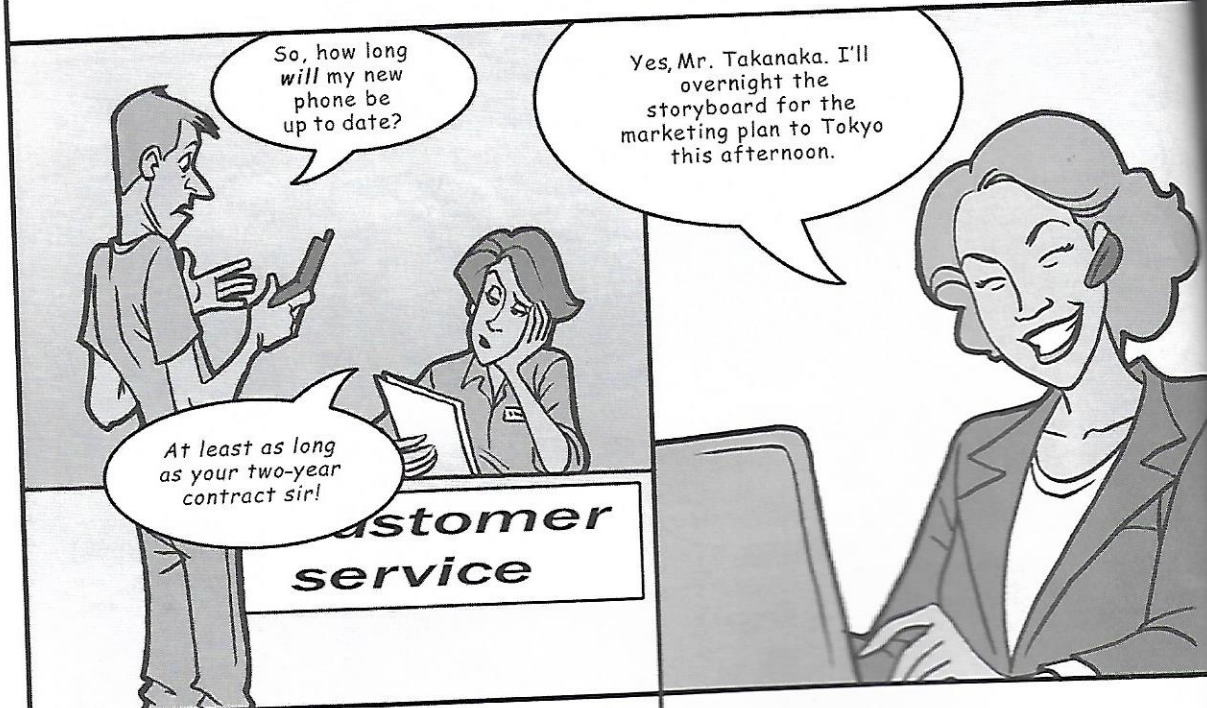
1991
Soviet Union (USSR) collapses

1994
North American Free Trade Agreement (NAFTA) takes effect

1999
Y2K panic

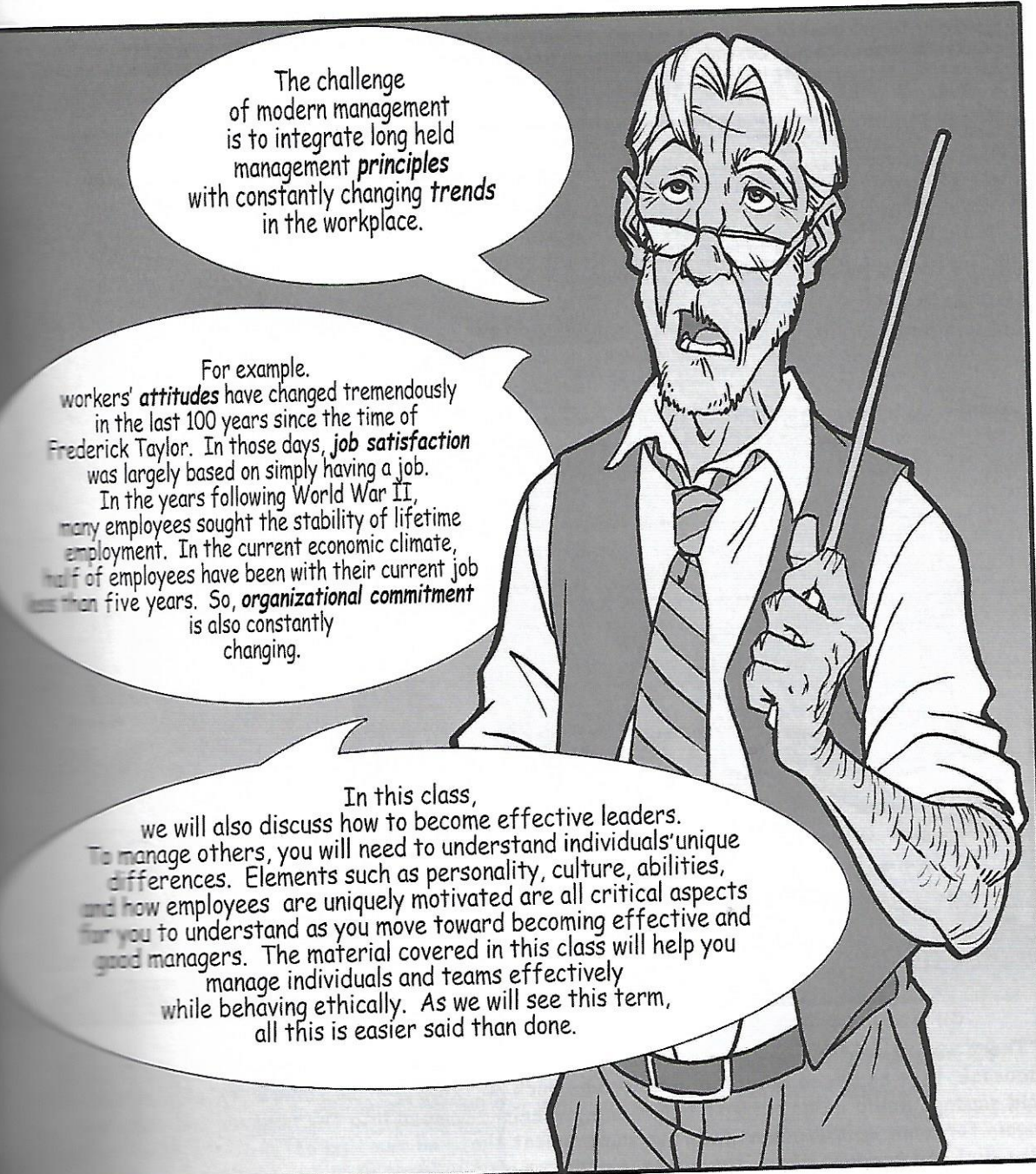


Industry boundaries are becoming blurrier; that is to say, it's becoming more and more difficult to identify current and future competitors. For example, many different products and firms can now be considered competitors in numerous communications and related industries.



Globalization and competition from foreign companies and countries is steadily increasing, and technological revolutions mean that products are becoming obsolete quicker than in the past.


More than 80 percent of the U.S. economy is now service based - so most of you will find jobs in the service sector as opposed to with companies manufacturing a specific product.



The challenge of modern management is to integrate long held management *principles* with constantly changing *trends* in the workplace.

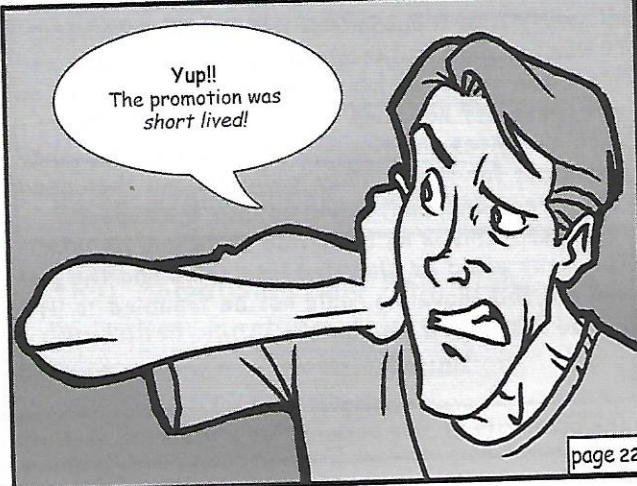
For example, workers' *attitudes* have changed tremendously in the last 100 years since the time of Frederick Taylor. In those days, *job satisfaction* was largely based on simply having a job. In the years following World War II, many employees sought the stability of lifetime employment. In the current economic climate, half of employees have been with their current job less than five years. So, *organizational commitment* is also constantly changing.

In this class, we will also discuss how to become effective leaders. To manage others, you will need to understand individuals' unique differences. Elements such as personality, culture, abilities, and how employees are uniquely motivated are all critical aspects for you to understand as you move toward becoming effective and good managers. The material covered in this class will help you manage individuals and teams effectively while behaving ethically. As we will see this term, all this is easier said than done.



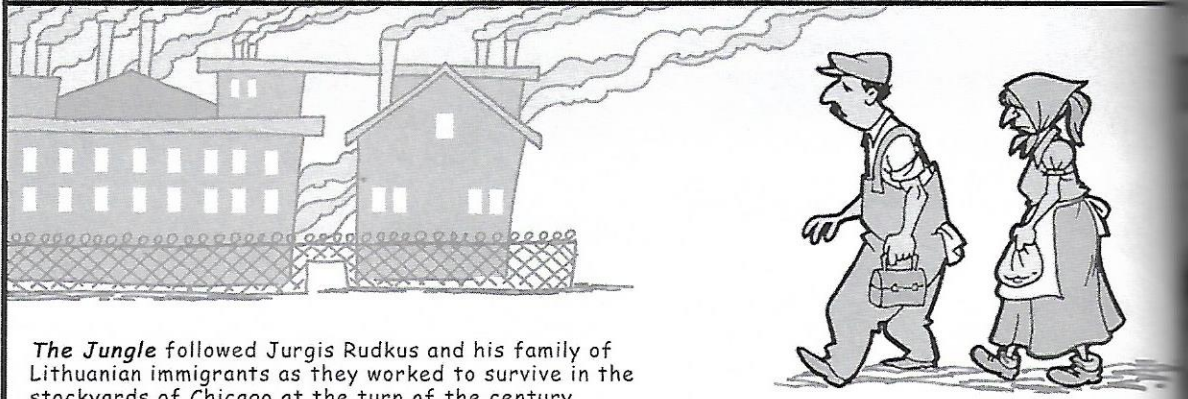
...the greatest career opportunity moved from... to weeknight...

Weren't you fired a week later?



Yup!! The promotion was short lived!

A number of controversial issues relevant to management today can be traced back to problems that existed for more than a century. A few years before Frederick Taylor published *The Principles of Scientific Management* in 1911, Upton Sinclair's book *The Jungle* outlined many of these enduring issues in 1906.



The Jungle followed Jurgis Rudkus and his family of Lithuanian immigrants as they worked to survive in the stockyards of Chicago at the turn of the century.

The book highlighted some of the most abhorrent practices in the meatpacking industry found in the United States at the turn of the century. Sinclair notes these practices in graphic detail.



"There was never the least amount of attention paid to what was cut up for sausage. Old sausage, that had been rejected, would come back all the way from Europe. This moldy and white old sausage would be dosed with borax and glycerine, dumped into the hoppers and made over again for home consumption. There would be meat that had tumbled off onto the floor landing in the dirt and sawdust where the workers had trampled and spit uncounted billions of consumption germs. There would be meat stored in great piles in rooms. Water from leaky roofs would drip all over it and thousands of rats would race about it.

It was too dark in these storage places to see well but a man could run his hand over these piles of meat and sweep off handfuls of dried rat dung. These rats were nuisances and the packers would put poisoned bread out for them. They would die and then dead rats, bread and meat would go into the hoppers together. This is no fairy tale story and no joke. The meat would be shoveled into carts and the man who did the shoveling could not be troubled to lift out a dead rat even if he saw one."



The popularity of this book and its widespread revelations led to the establishment of the Food and Drug Administration (FDA) in the United States.

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Sinclair's primary purpose for writing *The Jungle* was to advocate Socialism as an answer to the troubles found in the tumultuous United States at the turn of the century.



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Sinclair Writes in The Jungle:

"The Socialists were organized in every civilized nation; it was an international political party...the greatest the world had ever known!"

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"The people were tremendously stirred up...but nobody had any remedy to suggest; it was the task of Socialists to teach and organize them and prepare them for the time when they were to seize the huge machine called the Beef Trust and use it to produce food for human beings and not to heap up fortunes for a band of pirates. It was long after midnight when Jurgis lay down upon the floor...and yet it was an hour before he could get to sleep for the glory of that joyful vision of the people of Packingtown marching in and taking possession of the union stockyards!"

Sinclair hoped to convince his readers that Socialism could help right the wrongs caused by the cold, calculating capitalist machine that seemed to systematically use up and then discard human capital found in the packing plant and related industries highlighted in his book.

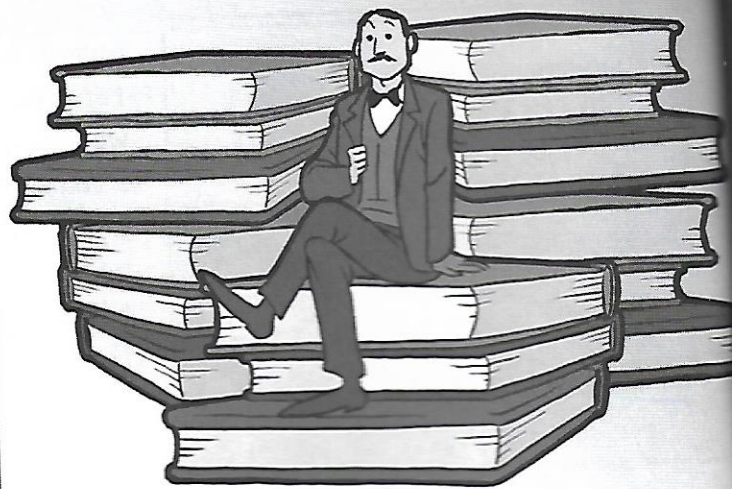
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Challenges about tradeoffs between organizational efficiency and how that affects individuals continue to be sources of fear as well as inspiration for workers, managers, entrepreneurs, and job seekers. In 1911, Frederick Taylor and Upton Sinclair, two men with very different points of view that have equal lasting effects on the way we see workers, business, and industry engaged in an editorial debate in *The American Magazine*. Taylor and Sinclair each felt strongly that their views would work well for the good of all, but their unique perspectives continue to be at the heart of debate that continues to this day.



Sinclair was also concerned about drastic job loss because seven out of eight men lost their jobs under Taylor's system.

Sinclair argued that more of the wealth gained through scientific management should be distributed back to society. He suggested that Taylor write a book that would help utilize the full population of the United States rather than one out of eight workers.



Sinclair suggested that if Taylor wrote such a book and then priced it at fifty cents instead of 5 dollars Taylor might sell 2 million copies rather than ten thousand.

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Taylor felt that Sinclair unfairly misrepresented the scientific management system.



He argued that Sinclair only cared about the workman, but society overall did gain in his system due to lower prices. Taylor believed that society actually benefited the most from scientific management.

of eight

Taylor also noted that workers did not improve performance based on their own initiative. Improvements were only made because better methods were taught to them by someone else.



Taylor concluded by noting that the most successful societies were the ones where individual workers were the most productive.

at fif
n ten



The debate started by Sinclair and Taylor continues today and has implications as you begin to enter the workforce with your first career jobs after you graduate.

In the popular job hunting book, *What Color is Your Parachute?* Richard Bolles (2007; pp. 31-32) no decade creates its own bogeyman to scare job hunters and make them fear for their jobs."

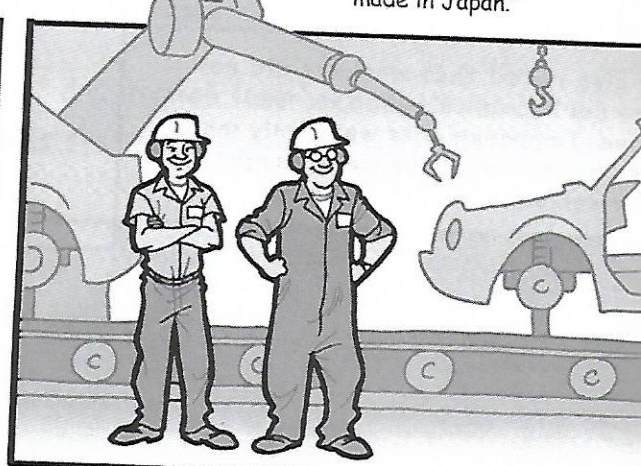
So, tell me about your previous work experience.

Oh, boy! How do 3.5 years of wa tables into rele management exper



"One decade it may be illegal immigrants."

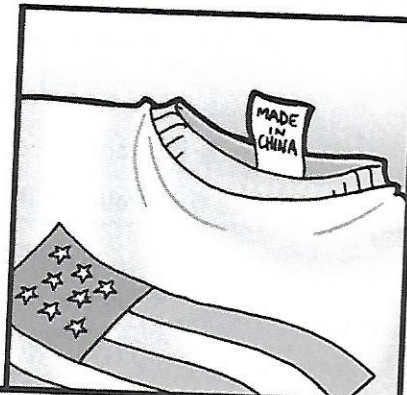
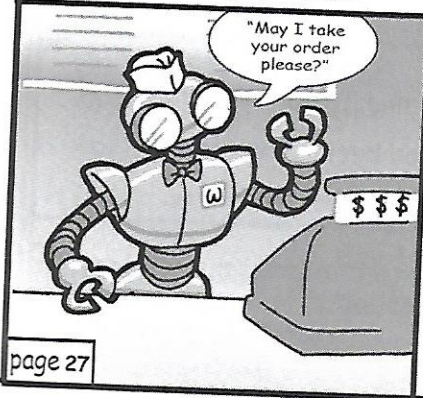
"In another, made in Japan."



"In another decade it turns out to be the taking over of manufacturing by robots."

"And yet another decade it turns out to be China."

"Over the last decade It has been outsourcing



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turn
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vant
ience?"

In this class is about finding and understanding strategies - activities that lead to superior, long-term performance. In comparison to early management consultants like Taylor and the Gilbreths, who focused largely on individual performance, we're concerned with efficiency at the individual, group, and organizational levels of analysis; however, like Sinclair we are also concerned with the ethical considerations for employees, managers, firms, and society overall.

In a simplified way, we'll always find that three things influence firm performance:



The leadership of the CEO and top management
In smaller businesses, the entrepreneur or founder



2. The unique resources of the organization



The industry context or competitive environment in which the organization operates

