



Journal of Management History

Discovering the foundational philosophies, practices, and influences of modern management theory
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Article information:

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Eric B. Dent Pamela Bozeman , (2014), "Discovering the foundational philosophies, practices, and influences of modern management theory", Journal of Management History, Vol. 20 Iss 2 pp. 145 - 163

Permanent link to this document:

<http://dx.doi.org/10.1108/JMH-09-2012-0056>

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Discovering the foundational philosophies, practices, and influences of modern management theory

Modern
management
theory

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Abstract

Purpose – The aim of this paper is to discuss the factors that influenced the establishment of modern management into the pervasive force it is today. It briefly describes modern management and discusses the reasons for this gap in knowledge in such a critical area. The main analysis of the paper focuses on the following social ideas and influences that created the conditions for modern management to be formed and established: social Darwinism and religion, the rise of social science, the promise of the scientific method, and the perspectives of the business tycoons.

Design/methodology/approach – This paper analyzes the prevailing trends of the late 1800s to determine which had the greatest influence on the formation of modern management.

Findings – This paper concludes that the greatest factors on the establishment of modern management were social Darwinism and the promise of the scientific method. These, then, provided the perfect environment for Frederick W. Taylor to become the embodiment and popularizer of modern management. Perhaps, surprisingly, Christianity had little influence.

Originality/value – Now that the prevailing influences of modern management have been surfaced, scholars and practitioners can more effectively critique the current state of management and determine whether legacy assumptions and influences are still valid, or whether modern management should change in some way(s) to better reflect accurate assumptions and influences operative today. The anonymous reviewers of this paper have found this analysis to be provocative and challenging. They have also concluded that a single article cannot do justice to such an important, yet relatively unexplored area. Consequently, the authors hope that other researchers will also be provoked to join in this important task.

Keywords Religion, Science, Management history, Christianity, Scientific management, Social Darwinism

Paper type Research paper

Introduction

Modern American management practices have become widespread in organizations not only in the developed world, but increasingly in urbanized third world business centers. Surprisingly, no one has explicitly documented how the foundation for these ubiquitous practices was formed. One might well question the omission of such research considering the meticulousness of the academic mindset. Bedeian (1998) notes that the management discipline has ignored its own history which would better illuminate the present. Even though Bedeian wrote this over a decade ago, a review of



the published articles in management history revealed that little additional illumination has occurred in the particular area of this article, the crystallization of management principles into the tacit framework that is essentially the embodiment of management practice in the developed world today[1]. In fact, this article stands as a challenge to the scholars working in this field to study the foundational elements of modern management more thoroughly.

With the advent of the technological age American management theories have been increasingly influential to international business. The western world tends to take practices such as objective performance appraisal, managerial hierarchy, and efficiency measures for granted. This article will address the question, "What spawned these and other management practices that are pervasive in the current global business environment?" What were the major philosophical, practical, cultural, or other influences that formed the foundation of modern management, which is, after all, applied philosophy (Stewart, 2009, p. 11)?

People's lives are greatly impacted by the state of their health and the foundational influences of modern medicine have been well researched and documented. Additionally, citizens are greatly impacted by their form of government and there is a clear, concise, documented history of the events that have directly altered and produced modern democratic government. Interestingly, because of the significant amount of time that people spend in the work environment, their lives are arguably impacted most significantly by modern management. However, because there is little extant theory, framework, or evolution on modern management theory, there is hardly a basis for scholars and critics to easily question or evaluate aspects of modern management which, as a side note, today, heavily influence both modern medicine and modern government. In fact, modern management ideology has spidered out to affect most aspects of people's lives including their religions, charities, social organizations, and recreational events.

Researchers and practitioners need to understand the evolution of a discipline such as management not only for historical accuracy, but also because that history informs the theory of today (Bedeian, 1998). Vaill (1998, p. 192) notes that the philosophical framework of modern management, "is so deep in our cultural consciousness that many of us can no longer see that it is a model. To millions of us, it is not a model but just the way organizations are, period". Kanigel (1997, p. 7) notes that the notions of efficient management introduced by Frederick Winslow Taylor, "so permeate the soil of modern life we no longer realize it's there".

Modern management described

Henri Fayol notes that all organizations, at least in the private sector, have activities that can be categorized into six groups: technical, commercial, financial, security, accounting and management (Fayol, 1949). This article will focus on the prevailing forces that affected the last category, modern management. More attention has been focused in the other five areas than in management, yet it is arguable that how organizations are managed has more of an impact on everyday lives than the other five groups. In essence, the primary philosophy underpinning modern management can be characterized as the Material-Instrumental model – that organizations are purely material entities and those in them are merely instruments (Vaill, 1998).

By the mid-nineteenth century, capitalism was well-ingrained in the USA, and it exalted objective, arms-length transactions between and among self-interested parties. In some areas of the country, business owners were already accustomed to interacting with slaves as if they were objects, literally buying and selling them as property. Some business owners were familiar with an apprentice model. Although Dickensian images of ill-treatment loom large in modern minds, many of these relationships were caring ones as the apprentice often lived in the craftsman's home and was meticulously and warmly taught the craft by the business owner. For the first time in American history, the notion of a wage-earner became more than an insignificant percentage of the work force. Accurate figures are difficult to estimate, but it is likely that there were more than twenty times as many wage earners in 1900 as there were in 1840 (Lebergott, 1966). What was undecided in mid-nineteenth century America was whether wage-earners would be treated more like partners, apprentices, slaves, or in some other manner. Modern employment has largely forged a different form, often providing health insurance, pensions, and other benefits. Modern management, in its approach to the employed work force, is primarily designed to operate objectively and instrumentally toward human "resources."

Taylor notes that in the latter half of the nineteenth century, management had a new rationale for instrumental action. His view is, perhaps, most poignantly captured in his statement in an interview that there can be no dispute about quantity of work or level of pay once scientific management had been implemented because such a dispute would be the equivalent of, "bargaining about the time and place of the rising and setting sun" (Hoxie, 1920, p. 40). People in developed countries in the twenty-first century take the notion of measurement so for granted that it is difficult to imagine the important shift that occurred when measurement became a dominant and pervasive tool of management. The gains in productivity were substantial. At the same time, the measurement component of instrumental action splits:

[...] each personal consciousness off from the thing that is valued and treats the thing as valuable independent of those who perceive it as valuable: splits profit from the profiteer, teamwork from the team, beauty from the eye of the beholder (Vaill, 1998, p. 198).

Stewart (2009, p. 56) adds the perspective that the:

[...] confusion of facts and values – or, more generally, the attempt to find pseudotechnical solutions to moral and political problems – is the most consequential error in Taylor's work and is the cardinal sin of management theory to the present.

This article does not seek to place the value judgment that Stewart does, but rather to note that modern management, for better or worse, does not make a major distinction between facts and values.

Weisbord (2004) has argued cogently that management pioneers often had far better intentions than the legacy they had a hand in creating. For his part, answering such criticism in his day, Taylor (1903, p. 148) stated that:

No system can do away with the need of real men. Both system and good men are needed, and after introducing the best system, success will be in the proportion to the ability, consistency, and respected authority of the management.

Although Taylor's intentions may have been for shared benefit between management and employees, disciples of Taylor separated the methods from the intentions and

Taylor's legacy of scientific management quickly became that of stern taskmasters, stop-watch in hand, pushing workers, in today's parlance, to do more with less. Bell (1999, pp. 352-353) noted that in this "view of work, man disappeared, and all that remained was 'hands' and 'things' arranged on the basis of minute scientific examination".

The gap in understanding the creation of modern management

If this is such an important and fruitful area for research, why has this work not already been completed? Various scholars have offered multiple reasons. It is relatively easy to record the foundational elements of historical events. Although there will always be new nuances added to complete the picture, the story of second world war, for example, is fairly well chronicled by the series of events, the key actors' actions and motives, and so forth. Not so when it comes to the development of a scholarly discipline. In this case, "Conceptual and other unobservable elements can frustrate posthoc analytic attempts to explicate the critical formal arguments and outline their ideological implications" (Murphy *et al.*, 2006, p. 3). Additionally, having a verifiable history provides an area of study with substantial foundation on which to validate its scholarship.

Management historians have noted that it is a much more difficult endeavor to, "trace the formative thinking of our field's major contributors, especially its founders" (McMahon and Carr, 1999, p. 228). Although not nearly as many years have passed since the founding of modern management compared with building pyramids, for example, there is enough distance, and the deeply imbued nature of the processes makes it difficult even for historians to observe the first appearances of its elements. Whiting (1964) for example, has described the historic origins of management theories and practices as a mystery, and laid out the hope nearly fifty years ago that serious research would unearth the story. However, the work has not yet been done. The editor of the *Journal of Management History*, for example, has more recently commented that, "Currently, only a small number of manuscripts dealing with management history are being submitted to journals, and few of those are being accepted for publication" (Van Fleet, 2008, p. 237). There is good ongoing scholarship about management history, but recent titles such as "Paradigmatic plurality or citation market" (de Vaujany, 2012) and "Groupthink and the Sanhedrin" (Schnall and Greenberg, 2012) suggest that the topic of this paper does not seem to be a popular area compared with others in academia at this time.

This article will focus on documentation that will aid those interested in reconstructing the philosophies and the historically significant events that took place during the late 1800s through the early 1900s that were directly responsible for laying the foundation for what scholars now term modern management theory. Topics explored will include the prevailing social ideas and influences of the day including, social Darwinism and religion, the rise of social science, the promise of the scientific method, the perspectives of the business tycoons, leading to Frederick W. Taylor's scientific management. As a foundation for addressing these topics, this article begins with a brief history of the early attempts at formalizing a management theory.

Early attempts at formalized management theory

In some fields, it is relatively easy to point to the *first* book written or the first intellectual contribution. Even in a field such as accounting, the oldest treatise can be found in a Venetian document in 1494 (*Business History Review*, 1926). This task is not

easily accomplished with modern management. Certainly, writing from millennia ago discussed elements of managing people and some of those elements remain part of modern management today. The earliest instance of a management approach consists of written records of business transactions recorded by Sumerian Priests in the city of Ur (Iraq) in 3000 BCE (Pindur *et al.*, 1995). The earliest proposal for business education seems to be that of Sir Francis Brewster in England in 1695 (“Proposal for Schools of Business Administration,” *Business History Review* (1941)). More comprehensive works include Sun Tzu (1963) who more than 2,500 years ago wrote about strategy, change management, and planning. The purpose of this article, though, is to describe the various forces that were present at the time that modern management coalesced into a prevailing framework, the ubiquitous and tacit system that has continued to the present day. Nonetheless, it is instructive to consider some earlier works that established part of the edifice that later became modern management. Any of a number of precursor examples exists. The three offered here are merely illustrative and not considered exemplary or representative.

St. Benedict of Nursia

St Benedict of Nursia was born around 480CE in Nursia, Italy, the son of a noble man. After great contemplation, Benedict chose to become a monk. He founded many monasteries and realized the need for some sort of management to guide the community on a daily basis. Benedict seems to have been greatly influenced by an anonymous document on monastic life entitled, *Rules of the Master*, from which he drew a great deal of the content when writing *The Rule of St Benedict*. Kennedy (1999) has shown how Benedict essentially understood and wrote about all of the principles Fayol (1949) later documented. For example, Fayol’s ninth principle, the scalar chain, explains how there must be a chain of authority for most effectively managing an organization. Similarly, Benedict also established a chain of command with the abbot at the top, the prior below him, and the deans at the first level of management, overseeing approximately ten men each. In general:

[...] the early Roman Catholic Church used several management practices such as scalar territorial organization, hierarchical chain of command and delegation of responsibilities clearly laid out for its pope, clergy, and people. Specialization, job descriptions, staff independence and compulsory staff service are also attributed to the early Church (Pindur *et al.*, 1995, p. 60).

A second example is Fayol’s last principle, concerning *esprit de corps*. Fayol (1949) emphasizes the importance of harmony and a union among the employees. Likewise, Benedict wrote at length about the importance of harmony, for example exhorting that, “if you have a dispute with someone, make peace with that person before the sun goes down” (Kennedy, 1999, p. 278). Kennedy provides a cross-reference for each of Fayol’s 14 principles with the variant found 1,400 years earlier in the *Rules of St Benedict*. Chan *et al.* (2010, p. 222) suggest that the four key themes in the *Rules of St Benedict* were:

- (1) leadership;
- (2) consultative approach;
- (3) cultivating humility and obedience; and
- (4) disciplinary and termination issues.

Robert Owen

Another person of note who made an early contribution to the field of management was Robert Owen. Born in Wales in 1771, Owen is often referred to by many scholars as a utopian socialist and the, “father of modern personnel management” (Pindur *et al.*, 1995, p. 61). While by all accounts he was well versed in the running of textile mills, his management focus was directed more towards the human dimensions of the labor force rather than the cost/profit of the owners. When Owen started the Lanark Mill in Lanark, Scotland, he found himself drawn to wanting to address worker disciplinary issues by some other means rather than by the corporal punishment method utilized by other mill owners. Instead, he developed what he called a silent monitor to encourage workers, many of whom were children, to work towards a common cause (Wren, 1987). The silent monitor consisted of blocks of wood, painted in black, blue, yellow, and white, which correlated to a merit system that was determined by Owen and his supervisors. Each machine had one of these color coded blocks placed on it at the end of the day depending on how the workers had done their job. Since the code was known to everyone who worked at the mill, this merit system was an early form of social censure. Wren likens it to the modern day equivalent of the “public posting of sales and production data to instill departmental pride or to encourage competition” (Wren, 1987, p. 56).

James Montgomery

Scottish cotton mill manager James Montgomery wrote the first management text entitled, *The Carding and Spinning Masters’ Assistant: or the Theory and Practice of Cotton Spinning* (Montgomery, 1833). Montgomery advised that:

[...] a proper mode of government should generally prevail throughout the whole establishment, and, doubtless, it requires much wisdom and consideration to know how to act in all occasions in the government of a large establishment, where there are a number of different classes of worker employed, so as to avoid all unnecessary severity, and, at the same time, maintain proper authority (*Business History Review*, 1968, p. 224).

Although these ideas were considered progressive for their time, Wren points out that Montgomery did not attempt to, “develop any generalized principles of management” (Wren, 1987, p. 45). This conclusion is an important one because by 1863, the Industrial Revolution, which had begun in England in the early 1700s, was advancing in full force in America. This revolution began the age where the dynasties of Vanderbilt, Carnegie, Rockefeller, Morgan, and others would be forged.

Prevailing social ideas and influences

Beyond these first attempts at developing a comprehensive approach to management there were the ideas and beliefs of society that carried significant weight in moving industry toward a system of management. Issues such as Darwinism, science, religion, Marxism, immigration, public resistance towards factories and industries in general, unions, and safety issues were the intangibles that were gradually impacting nineteenth-century American industry. These issues simmered in the background, slowly becoming factors in the establishment of modern management. George Herbert Mead (1936) has written what is perhaps the most highly regarded description of the backdrop of issues in the nineteenth century. For the latter half of the century, he lists the following as the most significant: Evolution, Marx and Socialism, Science, and the Industrial Revolution. These four movements are discussed below.

Social Darwinism and religion

Arguably one of the most important influences on the establishment of modern management was the publication of, *The Origin of Species by Means of Natural Selection or the Preservation of Favored Races in the Struggle for Life* by Charles Darwin (1859). In this work Darwin offered his theory of natural selection in an effort to explain both the evolution of life on the planet as well as why some species survive while others do not.

Sociologist Herbert Spencer (1864, pp. 444-445) incorporated Darwin's biological theories into social theories by stating that, "This survival of the fittest, which I have sought to express in mechanical terms, is that which Mr Darwin has called, natural selection or the favored races in the struggle for life". Schaefer (2001, p. 13) stated that, "In utilizing Darwin's theories to define society Spencer argued that it was therefore natural that some people are rich while others are poor". Schaefer further stated that, "Because many influential people had a vested interest in the status quo remaining as it was Spencer's theories were extremely popular in his lifetime" (Schaefer, 2001, p. 13). Spencer's ideologies morphed into a type of evolutionary theory known as social Darwinism.

Since Spencer's ideologies were so widely accepted at the time, those in power could use Darwin's and Spencer's works to justify maintaining that power. Business owners were among those who accepted Darwin's conclusions in a social, rather than biological, context and marshaled them to justify their growing wealth at the expense of their workers' lives and health (Hodgson, 2005).

In justifying his Standard Oil Trust to his Sunday school class John D. Rockefeller said:

The growth of a large business is merely a survival of the fittest . . . The American Beauty Rose can be produced in the splendor and fragrance which bring cheer to its beholder only by sacrificing the early buds which grow up around it. This is not an evil tendency in business. It is merely the working out of a law of nature and a law of God (Ghent, 1902, p. 29).

It is not hard to see why Darwin's theories quickly became so controversial, not only among scholars, but also among various religious leaders because, "Darwin's work created a decisive wedge between science and religion as well as between the faculty at Harvard's scientific school and the intellectual community at Cambridge" (Croce, 1995, pp. 85-86).

During the time that his book was published, the USA was in the middle of what some term the Second Enlightenment, and the word science was probably the most overused term of the day. If something could be called scientific it was instantly accepted by a public who saw themselves as generating a cutting-edge modern society. Many may have found fault with Darwin's work but because it was so scientifically based it was hard for scholars and the public to dismiss. In short, Darwin's theories generated, "Conversation, and controversy from the public person to the intellectual and is considered to be the leading agent of change in attitudes between science and religion" (Croce, 1995, pp. 87-90). Darwin's theory was the last straw that finally broke the relationship between science and religion that up until this time had been tenuous during the best of times.

During the Industrial Revolution, religion was widely used to justify rather than prohibit the difficult conditions of the workers. It is interesting that Carnegie, Morgan, and Rockefeller were all members of various religious organizations. However, they did

not seem to practice at work the full range of religious tenets of these organizations. This was most likely because they believed they were in superior positions in life because of divine appointment. In an address to Syracuse University students one of Rockefeller's chief attorneys, S.C.T. Dodd stated that, "nature or the devil has made some men . . . lazy and worthless" (Ghent, 1902, p. 29) while others are gifted with sense and self-control. Social Darwinism was a popular answer for the reason behind the disparity between the wealthy and the poor as well as the disdain for the emerging middle class. The rich believed their wealth and privilege were a result of the evolutionary process (Martin, 2010). The business elite of the day held an interesting confluence of views. They were superior in intelligence and abilities to their workers, they held the workers in disdain while simultaneously allowing the workers to improve their lot, and also felt a moral obligation to be the, "loaf-giver to the needy" (Ghent, 1902, p. 27).

At the same time, religion did influence many organizations such as the Salvation Army and other missionary groups to attempt to help the workers improve their lives both in the factories and in their private lives by offering meals, clothing, and medical care to those in need. However, with regard to the management of the organization, it seems to be the case that religion, "as a cultural power – died at the time of the Renaissance" (Rand, 1982, p. 83) and had almost no impact on the formation of modern management. It is instructive that not only does Mead (1936) not list Christianity as a prevailing force in the late 1800s, but the term "Christianity" does not even appear in the index of his nearly 500-page book.

There were certainly examples of many business owners who, because of religious beliefs, tried to operate as humanely as possible toward their employees. One interesting example is the Joseph Bancroft and Sons Company which began in Rockford, Delaware in 1831. The Bancroft family were devout members of the Society of Friends, or Quakers. The company and its owners had prided themselves on an, "appreciation for the individual and the conditions under which he worked (Petersen, 1985, p. 134). The Bancrofts employed "welfare work," the term used by a number of companies who sincerely believed that more satisfied employees would be more productive, a concept that Frederick Taylor would later echo in his management philosophy. The Bancroft family even employed a welfare secretary who tried to establish personal relationships with the employees and their families, helping them out in times of special need such as sickness or injury. This company grew from 500 employees in 1895 to approximately 1,800 by 1913. This rapid growth resulted in them considering scientific management and they retained Henry Gantt as a consultant. The clash of philosophy was, "a ground for conflict as Taylor's ideas, even though Gantt interpreted them with more attention to the worker, appear[ed] antithetical to the idea of 'welfare work' as practiced at Bancroft" (Peterson, 1985, p. 134). Later examples of more paternalistic companies would include the Hershey Company, which built houses and schools for its employees and the IBM Corporation which provided country clubs and recreational leagues for employee sports.

The rise of social science

The development of a "social science" was an important backdrop during the formation of modern management. Karl Marx, Emile Durkheim, and Max Weber were three of the main contributors to the field of social science (Schaefer, 2001). While

others such as Adam Ferguson, Auguste Comte, and Herbert Spencer were certainly influential in developing theory, it was Durkheim, Weber, and Marx who are most often identified with the creation of social science particularly where business was concerned.

Having lived during the peak of the Industrial Revolution these men were witness to the ramifications of the building of big business. In their writings it is clear that all three men were against capitalism not just because of what they had witnessed but also because of where they saw the entire movement going. In short, it is clear that they had no faith whatsoever in the ideology that large-scale capitalism was a positive evolution for society.

In, *Wage-labour and Capital* Marx acknowledged the advancement of the business owners, or bourgeois as he termed them, however he saw nothing but misery for the workers (Marx and Engles, 1978). "We must not even believe them when they say that the fatter capital is, the better the slave will be fed. The bourgeoisie is too enlightened, it calculates too well . . ." (Marx and Engles, 1978, p. 211). Later in, *The Grundrisse* Marx wrote that this expanded version of capitalism generated by the machine age would not last:

Hence, the highest development of productive power together with the greatest expansion of existing wealth will coincide with the depreciation of capital, degradation of the labourer, and a most straitened exhaustion of his vital powers (Marx and Engles, 1978, p. 291).

After witnessing issues such as loss of work by skilled craftsmen to machines, the rise of urban societies which led to a shortage of housing, poor sanitation, food shortages, massive overcrowding, longer working hours with little monetary compensation, unsafe working conditions often resulting in shortened life spans, and the horrors of child labor, Marx did not believe that there was any way that this new form of capitalism could survive. He held the staunch belief that the workers would rise up against the business owners, take over the businesses, and create a socialist society. In his, *Manifesto of the Communist Party*, he argued that this was simply a logical progression of events because men would not tolerate being treated like slaves forever (Marx and Engles, 1978, pp. 478-482).

Emile Durkheim concluded that industrial capitalism really had no effect on a person's happiness or state of satisfaction. Durkheim (1960, pp. 180-182) observed that the money the laborer earned was not enough to truly improve his station in life. Likewise, the money the business man made was in keeping with wealth that he already possessed. Therefore, neither one was actually able to change or alter their circumstances to the point that would generate any type of euphoric response or progress. Durkheim (1960, p. 310), like Marx, also pointed out that eventually:

Since lower classes are not, or no longer are, satisfied with the role that has fallen to them by custom or law, they aspire to functions that are prohibited to them and seek to dispossess those who exercise them.

Clearly, Durkheim did not feel that the workers would tolerate the many injustices in their lives forever. This was most likely because he felt that social constructs such as religion and business arose solely because people can only exist as social beings. Therefore, when a group of social beings became disenchanting with a specific societal construct they would cease to support it and the construct would fall by the wayside.

Finally, Max Weber, who was considered, “the father of bureaucratic management” (Pindur *et al.*, 1995, p. 62), also had misgivings about allowing a system that was so detrimental to a large portion of the population. As Weber studied the individual response to various social conditions he considered the rationale behind an individual’s responses. Weber (2003) saw two different rationales behind decisions the individuals made concerning social situations:

So occasionally he distinguishes between “goal-rationality” – effectiveness in serving one’s goals whatever they are, rational or irrational – and “value-rationality”, the rationality of goals (and not merely as means to some ulterior goal) and other values, and of actions in their relation (otherwise than as means) to some value (Weber, 2003, p. 115).

Marx, Durkheim, and Weber concluded that industrial capitalism presented more harm than good and could not be sustained by society. Marx saw capitalism as a method used by those in power to exploit the masses for their own personal gain. Durkheim felt that industrial capitalism was not going to improve the life of anyone involved. In fact, he saw that it was simply going to reiterate the current status quo. Weber felt that the individual would find far too much conflict between what they personally felt was right versus what society said was right. In conclusion, these social scientists were not supporters of the idea that big businesses could improve society or the lives of those involved.

Knowingly, or not, each of these three men did help birth the era of modernity as applied to organizational life. Although they may have disagreed with Rockefeller and his peers on the direction and path for industrialization, collectively they agreed, tacitly, on the terms of engagement – the Material-Instrumental model of organizational life. The impact of the social scientists was greater on the formation of unions and on society’s general view of business, but they had no meaningful impact on the objective, measurement-oriented, instrumental approach to workers. Weber (2003) observed that beginning at this time in history, it is inevitable that the Material-Instrumental framework will “crowd out” any values-based perspective. This centerpiece of this modernist framework, the scientific method, is described in more detail in the following section.

The promise of the scientific method

Another social component that influenced the creation of a management system was the use of a scientific approach to advancing the efficiency of work. Scientists and practitioners during this time period spearheaded research and discovery in areas such as chemistry, medicine, mathematics, astronomy, and machinery. This bonanza of discovery completely changed century-old ideas. Heralding in the modern age of the day these discoveries led to the popularization of the term science. It affected change in the ideas of religion, the economy, and the nature of human kind and its perceived destiny.

Inventions such as Robert Fulton’s steam engine, Edison’s light bulb, the steel invention process, Morse code, railways, and petroleum refinement enabled industries to grow at unprecedented rates. The use and continued improvement of these inventions combined with Henry Ford’s introduction of the assembly line process into the business model of that day made big business the inexorable force that it remains to this day. Of all the inventions, the application of electricity was the most influential. Nathan Rosenberg (1998, p. 7) concluded:

Electric power is properly considered as a key element of the so-called “Second Industrial Revolution” of the last quarter or so of the 19th century and the beginning of the 20th. This revolution, together with the transformation of the chemical industry and the internal combustion engine, redefined the whole set of technological opportunities available to industrializing societies.

From this point it was inevitable that industry, both in Europe and America would experience rapid economic growth at a rate never before seen in the history of human kind. Science and business became overnight bedfellows; each relying on the other for its existence and propagation.

During this time period, to be considered “scientific” was the social gold standard. Much like modern day terms such as organic, environmentally friendly, or energy saving, the term “scientific” held much social prominence. This revolution in which logic, experimentation, and documented results were king lasted well into the 1900s. Because so much progress applying science to material problems was evident, the prevailing sentiment of the day was that any problem could be approached, and solved, using the scientific method. Many believed that some day, hunger would be alleviated, crime would be obliterated, and wars would be eliminated by the continuous development and application of science.

The perspectives of the business tycoons

It is interesting to note that out of the four management challenges (Chan *et al.*, 2010) summarized in *The Rule of St Benedict*, three were very similar to the issues which led business owners in the late 1800s to understand the need for the development of a more formalized management theory. The points becoming problematic for business owners were leadership, obedience, and disciplinary and termination issues. While no specific documentation exists to directly tie early management theory of that time to St Benedict, it is interesting to note that leaders of organizations have had similar issues impeding their successes since at least the fourth century.

The great tycoons of the late 1800s made so much money that, in addition to creating specific industries, they built wealth that established financial dynasties. The tycoons that had given birth to these dynasties were concerned with cost-cutting measures to maintain their financial positions. For example, when questioned by the Industrial Commission in 1899, Standard Oil Director Henry Huttleston Rogers was quoted as saying, “We are not in this for our health we are in this for the dollars” (Tarbell, 2003). Similar attitudes would later be prevalent in men such as Andrew Carnegie, J.P. Morgan, and John Rockefeller who focused their business plans on cutting cost. Most business tycoons of the day had little concern for their workers who turned over at high rates. The massive influx of immigrant labor to American shores ensured a continual supply of other laborers who were looking for any work that they could find.

When brought up on charges that it violated the Sherman Antitrust Act in 1905 John D. Rockefeller’s Standard Oil Company would argue its case before the US Supreme Court by stating that, “Defending against monopolization charges, Standard claimed that it had innovated both technologically and in the scale economies-enhancing investments by which it aggressively expanded its business” (Scherer, 2011).

Roscoe and Freark (1971, pp. 19-20) reported that, "Public opinion and the examples of a few enlightened employers could not control the ruthless practices of unrestrained free enterprise which were rampant during the Industrial Revolution". They went on to explain that the people demanded that the government step in and set laws to protect the workers. By the 1880s, American industry was growing at a steady rate, competition was not yet a factor of any consideration, labor was abundant, and profits were accumulating. The primary brake on this "unrestrained free enterprise" was public opinion, which was turning against the John D. Rockefellers of the country thanks to the efforts of the previously mentioned social scientists, religious leaders, and other social activists. Public outcry eventually forced the federal government to investigate, label as a monopoly in violation of the Sherman Antitrust Act of 1890, and thus demand the breakup of Rockefeller's company, Standard Oil (Chambers, 1960).

The influence of Christianity

Mead (1936) did not identify Christianity as a major factor in the unfolding of the nineteenth century. Although his list of factors is well-respected, it is subjective and others have identified different factors, including Christianity (Thomas, 1989). Consequently, because of its significance in the formation of other important institutions, such as American government and modern medicine, Christianity was investigated in this research, but deemed not to have had much influence on the formation of modern management. As noted earlier in the article, the foundational influences of modern medicine are well understood. The influence of religion (Christianity, in particular) is clear in the foundation of the American Medical Association. The very first line of the *Code of Medical Ethics of the American Management Association* (AMA, 1847) is, "Medical ethics . . . must rest on the basis of religion and morality." Likewise, the foundational influences of modern democratic government are also fairly well-documented.

The influence of Christianity is, perhaps, even more integral here. In thirteenth century Britain, clergy (only Protestants), together with nobility, comprised what later became the Upper Chamber of Parliament. In the sixteenth century, the other chamber, then named the House of Commons, was granted St Stephen's Chapel as its regular meeting place. It was customary for members to bow to the altar. The founding of the US government was also heavily influenced by Christianity. Although some point out that founders, such as Benjamin Franklin and Thomas Jefferson, might not meet a definition of a practicing Christian, there is no doubt that procedures, practices, and outcomes were dominated by the prevailing Christian ethic of the day.

Also, noted earlier, most of the business tycoons of the day were often nominally Christians, but not Christians in practice. Carnegie (1920) later disavowed his Christian veneer, writing:

When I, along with three or four of my boon companions, was in the stage of doubt about theology, including the supernatural element, and indeed the whole scheme of salvation through vicarious atonement and all the fabric built upon it, I came fortunately upon Darwin's and Spencer's works . . . I remember that light came as in a flood and all was clear. Not only had I got rid of theology and the supernatural, but I had found the truth of evolution.

Carnegie established a foundation in 1905 with the stipulation that it would only provide funding for secular colleges and universities (Hohner, 1987). Many colleges and

universities abandoned their religious affiliations to participate in the pension plan that the Carnegie Foundation funded.

Rockefeller would also take actions which would belie his Christian trappings. Rockefeller avowed a type of Christianity that placed doubts on what many would characterize as the defining essence of Christianity – the virgin birth, the resurrection from the dead, the divinity of Christ, the Bible as revelation from God, and miracles (“Fosdick debaptised,” *Time*, 1929) and he financially supported Harry Emerson Fosdick for whom he built a “temple” to preach this message (“Fosdick’s pulpit,” *Time*, 1925).

A similar story is found in Charles W. Eliot who served as President of Harvard University from 1869-1909. Eliot has been identified as the primary force for secularization in higher education (Shoemaker, 2006-2007). Not only was he a leading voice in higher education but, “by the turn of the century he was one of the leading public figures of the country; his opinion and support were sought on every variety of public question” (Morison, 1936, p. 397). Like Rockefeller, Eliot was nominally Christian, a Transcendental Unitarian, but his espoused views and philosophy match nicely with, The Amsterdam Declaration, a document put forth by the International Humanist and Ethical Union (IHEU) (IHEU, 2002). Eliot denied that the Christian Bible was a greater source of truth than other documents and did not accept Jesus Christ as his savior (James, 1930). He removed the study of religion from the required Harvard curriculum and fundamentally shifted the arbiter of truth from objective evidence to what students determine for themselves. It is, perhaps, most accurate to characterize Eliot as a spiritual secular humanist. Eliot was a leading public figure and he headed a university that educated the elite students of the day. Frederick W. Taylor’s religious beliefs also fit better with those of a secular humanist than a Christian. As a teenager, “he enjoyed attacking religious ideas that most people regarded as vital” (Copley, 1923, p. 69). Later in life he was known to equate theologians with liars and, “his attitude towards ‘revealed religion’ was frankly agnostic” (Copley, 1923, p. 70). From everything we know of Taylor and his scientific approach to management, it is not at all surprising that, “he was distrustful of anything that was not based on definite, tangible, provable facts” (Copley, 1923, p. 71). At the same time, there seems to be more documented genuine personal concern on Taylor’s part than on Rockefeller’s or Carnegie’s. He was helpful to clubs for boys and girls and genuinely thought that his application of scientific management was an, “extension of the old religious truths of love and service” (Copley, 1923, p. 72) because he was bringing the organization of work into conformity with God’s nature.

Perhaps, the most famous scientist in approximately 1880 (Darwin), the leading educator and a prominent public figure (Eliot), the most famous business tycoons (Rockefeller and Carnegie), and the first management consultant/scientist (Taylor) were all skeptical of the traditional teachings of Christianity, at least as it was commonly defined. A very significant shift took place about that time regarding the role of Christianity among the elite figures having an impact on business. Christianity was vitally important to the creation of democratic government, dating back to the thirteenth century and beyond. It was still a strong influence in 1847 when the early crystallization of modern medicine was codified in the USA. But, by roughly the 1880s a sea change had occurred among the elite who played the dominant roles in forming modern management. They were predominantly people who were nominally Christian,

but not believers in the essentials of the Christian faith, and those transcendental essentials seem to have played no role in modern management.

Frederick W. Taylor and scientific management

Mead (1936) certainly highlighted the role of science in determining events of the nineteenth century. However, he did not mention Frederick Taylor in his book, likely because his orientation was not specifically to organizations. Taylor provided a philosophical approach that was consistent with the business owners' social Darwinian proclivities, the aura of science, a method for making changes, and examples of proven[2] results. Frederick W. Taylor became emblematic of modern management. The analysis of this article climaxes in Taylor, his scientific management, and the primary edifice of modern management that is still operative today.

Much has been written about his life and the 1911 publication of his book, *The Principles of Scientific Management*. Therefore, there is little need to reproduce that information here. Taylor has been so influential that when members of the Management History Division of the Academy of Management were polled about the most important contributors to management thought and practice, Taylor received 51 first-place votes and Barnard finished second with nine (Wren and Hay, 1977). In a careful replication of that study, Heames and Breland (2010) found that Taylor still had the highest regard, but that Weber had supplanted Barnard for second place. Interestingly, Heames and Breland found that only four articles about Taylor's work had been published in appropriate outlets between 1976 and 2006. Heames and Breland reaffirmed the, "conclusion that Wren and Hay made 30 years ago, [that] there is a difference of opinion among scholars as to who has made the biggest contribution to American business and management thought" (Heames and Breland, 2010, p. 431).

A few statements about Taylor do seem specific to the analysis of this article and important to mention here. By all accounts Taylor was a man who had a wide range of talents and interests. He, "held over 40 patents and won the first US National Championship doubles tournament in tennis" (Blake and Moseley, 2010). As an inventor, as well as a champion tennis player, Taylor demonstrated how holding a methodological approach to just about anything could lead to improvements that would enhance success.

Taylor also had the unique perspective of having worked his way up from the shop floor of a factory into a management position. This gave him an in-depth understanding of each step of the manufacturing process. Possessing this knowledge enabled Taylor to examine each area to see how improvement could be made so that the overall production process would be more cost effective, utilize less time, and still maintain quality (Taylor, 1911).

Taylor's scientific management was more than just a way for business to improve efficiency, decrease cost, and improve profits. It was also about effectively utilizing all of the company's resources, which included labor. Up until this point labor was ill defined within the business model. However, Taylor understood that output was only as good as the workers and their training. As noted earlier, Taylor's own experience as a practicing manager caused him, "to make a determined effort in some way to change the system of management so that the interest of the workmen and the management should become the same instead of antagonistic" (Nyland, 2000, p. 251).

Thus, it would be logical to conclude that in order to accomplish these goals a business would have to employ the use of a method that would enable both the

employee and the business owner to thrive. The argument of this article leads to the conclusion that Frederick Taylor and his Scientific Management Theory was the threshold at which these various factors culminated. Additionally, Taylor and his theories were the turning point that took industry into its next evolutionary stage. Whether or not Taylor was specifically aware of all these issues is debatable. However, what is certain is that Taylor was looking for a way for industry, beginning at Midvale Steel Company in Pennsylvania, to become more efficient.

Stewart (2009, p. 36) noted that, "Taylor's grand generalization played a crucial part in the creation of a new discipline. The practice of management undoubtedly preceded him; but the idea of management was something new". Taylor became the popularizer of modern management in a way that no other figure in the field of management has been since. An analogy to today's era, but on a much smaller scale, would be Deming (1986) as the popularizer of total quality management and Senge (1990) as the popularizer of systems thinking.

Final thoughts

Although there were a number of prevailing ideas present in the second half of the nineteenth century, some that are perhaps surprising, played a much more significant role in the establishment of modern management. There is no doubt that the transition from farms to factories, religion, and the critiques of the budding social scientists created a tension with big business and a sense that employees should be treated better. However, the more dominating ideas seemed to be those of social Darwinism and science. Common interpretations of Darwin's work sanctioned a class structuring of society and a "dog-eat-dog" approach to the conduct of business. Moreover, the tremendous advances of science and technology were indisputable. Progress through the scientific method of objective interaction and a focus on what is observable all set the stage for the introduction and establishment of the Material-Instrumental (Vaill, 1998) approach to management.

As Bedeian (1998, p. 9) has noted, "an appreciation for the management discipline's origins is also invaluable for understanding the implicit values and orientations of modern practitioners, as well as the inherited epistemological foundations, theoretical paradigms, and methodological strategies of today's scholars". This article has attempted to surface the prevailing ideas and forces, primarily of the mid-to-late 1800s, which formed the type of management common in the developed world today. Modern practitioners do maintain the value of a "survival of the fittest" approach to labor and the orientation toward the technical aspect of work life largely because of Darwin and Taylor, respectively.

Admittedly, there were many theorists who came after Taylor who had a direct impact on the evolution of the management of business. But Taylor, who had started out working on the factory floor, was the one who was able to capture the attention of executives and laborers. Working men listened to Taylor because he had walked in their shoes and understood their contributions. Business leaders, eager to continue to expand their enterprises, wanted the most efficient and cost-effective method available to meet that goal and Taylor's ideas were reasonable.

This article has attempted to surface the prevailing impacts of 150 years ago that have "saddled" us with the approach to modern management we have today. We use the word "saddle" to offer the analogy to another transition that was happening at

about the same time. The bicycle was replacing the horse as a mode of individual transportation. Barker (1985) has nicely illustrated how the design of the bicycle incorporated the concept of the horse saddle for the seat, even though it might have been prudent to shift the paradigm of the seat to something more comfortable and appropriate for this new conveyance. Most bicycle riders would attest to the tremendous discomfort of the standard bicycle seat. Barker himself designed the “easy seat,” which does a much better job of supporting the rear ends of people on bicycles.

One outcome of this paper is to question whether the assumptions of management we are “saddled” with today are the most “comfortable.” History could have taken an alternate turn and modern management might look very differently today. Researchers are left to speculate about other possibilities. Should employees be able to “elect” their manager, as Ackoff (1994) has suggested? Such a system would likely result in major changes to the management of employees. Should managers be held accountable for the output of their subordinates, which Jaques (2002) suggested would put managers and employees on the “same side,” as opposed to being in the relatively adversarial position imposed by the arms-length objectivity implicit in the manager holding the employee accountable for the employee’s output? Should the management role be reconceived as a servant leader (Greenleaf, 1977) with a caring mode supplanting an instrumental one?

Only by surfacing the historical influences that locked in over time, as this paper has done, can managers and scholars more easily question those influences and suggest possible changes for today and the future. The anonymous reviewers of this paper have found this analysis to be provocative and challenging. They have also concluded that a single article cannot do justice to such an important, yet relatively unexplored area. Consequently, we hope that other researchers will also be provoked to join in this important task. Beyond being able to understand exactly how business management has gotten to where it is today there is perhaps an even more important benefit for continuing to surface and challenge the assumptions of modern management. That payoff, for both the academy and industry alike, could well be the formulation of a method of management that allows organizations to advance to another level of effectiveness and employee satisfaction. After all, the best kind of flattery is not always imitation but innovation that propels society forward.

Notes

1. Searches were conducted in ABI/INFORM Complete, Business Source Complete, JSTOR, and Web of Science using a wide range of terms including “history,” “philosophy,” “trend,” “impact,” “management,” “influence,” “ideology,” “evolution,” and all of the management theorists, practitioners, and business owners of the time period including “Taylor,” “Rockefeller,” “Carnegie,” and many others.
2. Whether or not the results were “proven” was somewhat controversial at that time and is, perhaps, even more controversial today (Stewart, 2009).

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