



Certain Victory, Uncertain Time: The Limitations of Nineteenth-Century Management Thought

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Abstract

The purpose of this chapter is to explore the beginnings of modern management by tracing the development of nineteenth-century management thought in Europe. I examine the lives of Owen, Babbage, Ure, and Fayol, noting both their contributions and the limitations of their thought in their historical context. My contention was that management did not really emerge as a distinct field of study until the time of Taylor. Namely that the industrial world was too new and thought to be a fad that limited the intellectual development of management. In addition, Ure and Babbage were polymaths, devoted to fields which limited their management contributions. Fayol was compared with Taylor, which limited his appeal, even though both men wrote about different aspects. Although there are themes of modern management in the work of Owen and others, various issues prevented them (either the limitations of their thought or other circumstances) from being the prime mover.

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Introduction

In 1886, Henry Towne, an American engineer, delivered a famous speech arguing for the need for management as a distinct field of study. Frederick Winslow Taylor would begin the process of management development – creating, according to Drucker, what would become America’s most notable contribution to the world, besides the Federalist papers. The development of the division of labor supported by management provided escape from subsistence production. Prior to the twentieth century, most humans lived in conditions similar to the Stone Age. Starvation and depravation affected most people. The average life was short, working life brutish, and afflictions common (the quote from Hobbes [2002] was “poor, nasty, brutish, and short”). Abraham Lincoln lost three sons to early death – for conditions treatable today. Until the development of the steam engine, information moved as quickly as the quickest horse. Napoleon and Wellington received information at the same speed as Alexander the Great and Caesar did. Most people never left the area in which they were born. Sons mostly took on the professions of their fathers. Life was cheap.

Management created the economic conditions to alter this course, to create a new, modern world through encouraging the specialization of labor, costs reduction, increasing wealth, consumption, and wages. Management also allowed for the new developments, such as machines and steam engines, to improve. The telegraph allowed information to be sent quickly between different places. Lincoln did not have wait months, as did James Madison did, to know the success of his armies in the field. The development of canals, railroads, and roads lead to the development of massive markets in the United States and Great Britain due to the reduction of transportation costs. No wonder, when Samuel Morse sent the first message over the telegraph, it was “What God Hath Wrought.” Morse’s generation believed that the millennium was at hand (Howe 2007).

Yet, these developments caused as many problems as they solved. The commodification of labor meant that work was no longer done at home, necessitating new techniques to manage workers. Peasants moved from their native homelands to cities to find work. Tradition and religion were slowly washed away in the tide of progress. The question of coordination and management issues created the “Labor question” – how to manage this new class of laborers. There was the whiff of revolution in the air; France, Germany, Britain, Austria, and Russia faced revolt, destruction of property, and even rebellion. The United States fought a brutal and destructive Civil War.

To explore nineteenth-century management thought and the European contribution to the history of management, I have selected four thinkers, whose influence is continued to be felt to this day. The first is Robert Owen, one of the first socialists and promoters of social science as a solution to the problems of the industrial world.

Owen had a focus on human resource development. The next two thinkers are Charles Babbage and Andrew Ure, whose focus on machinery makes them some of the first scholars to examine operations. Owen, Babbage, and Ure, were targets of scorn in Marx's *Kapital*. Finally, Henri Fayol moved management beyond the shop floor to the boardroom, confirming his position as the father of strategic management.

There were many solutions to the problems caused by industrialization. Some, such as Robert Owen, wanted to take the best elements of the past and the best modern elements to create a new society. Others, such as Charles Babbage and Andrew Ure, loved the development of machines and hoped that the resulting increase of knowledge would lead to a general uplift of humanity. Henri Fayol, the most practical, sought to develop a theory of management that would provide managers with tools needed to manage labor relations. Each of these approaches had great promise, but management as a field did not emerge until the progressive era in the United States, with Frederick Winslow Taylor as the leader. The purpose of this chapter is to explore the strengths, limits, and contradictions of various nineteenth-century management thinkers. The contention is that the need for management was too new and that many people believed industry was a passing fancy. Each of these men, for one reason or another, found it difficult to gain support. However, each, in their own way, paved a way for future management research.

Robert Owen: Radical Reactionary

Robert Owen is a paradoxical historical figure. For some, such as G.D.H. Cole (1925), Owen is an idealistic figure attempting to create a harmonious society from the social wreckage of the industrial age. For others, such as Joshua Muravchik (2002), Owen was a wild eyed maniac, whose ill-begotten dreams inspired the ravaged twentieth century. Some view Owen as a nonpolitical figure who used social persuasion to transform society; others as the ultimate political operator. Many commentators see him as someone who fought the good fight against capitalism, religion, and status; others see him as a crank who practiced spiritualism and defended the paternalistic system of the South. He was an inspiration and target of scorn for Marx and Engels. He was a narcissist who deeply cared about humanity. He was a skeptic who attacked Christianity, but whose ideas flourished in a Christian culture. He was the industrialist who coined the term socialism. To some, he was a greatly respected figure, to others a figure of scorn. Most of his critics admire his intelligence and integrity. His admirers denounce his paternalism and his courting of elites.

These diverging viewpoints indicate the complex character of the man. Owen simply was a figure that had the ability to produce strong emotions. Owen's principal contribution was the development of socialism and the use of social science for managing society (Claeys 1986, 1987, 1989). He anticipated that the emerging capitalistic movement, the introduction of machines and scientific knowledge,

would reorder society. Therefore, the old superstitions and institutions of society would disappear and it would be up to management to create cooperation – a belief shared by Elton Mayo. Yet unlike the incremental Mayo, Owen wanted to give birth to a new society and new man (Iggers 1959).

Owen's Ideas and Biography

Robert Owen was born in 1771 in Newtown, Montgomeryshire, Wales, to an ironmonger and small business owner. He was the sixth of seven children. Despite his family's wealth, he received only 2 years of education from 5 to 7 whereby he tutored the younger students for 2 years. At ten, his parents put him on the coach to London with forty schillings in his pocket. Owen worked a number of jobs moving up the managerial pyramid (Davis and O'Hagan 2010). When Owen was 21, Peter Drinkwater gave Owen the chance to manage 500 employees at his mill. After 2 years with Drinkwater, he found partners and started his new company, the Chorlton Twist Mills. Owen (Donnachie 2000) left Drinkwater because he was not interested in marriage with Drinkwater's daughter.

On a trip to Scotland, he met and fell in love with Ann Caroline Dale, the daughter of David Dale, a wealthy mill owner. To aid in the courtship of his ladylove, he offered to purchase Dale's mills at New Lanark. He noted two primary issues with contemporary management thought. The first was that very little attention was given to workers in comparison to machines. The second was that he was unable to find enough talented and sober workers who would not steal from the company or destroy property (Unwin 1922). When he went to New Lanark, he found that of the approximately 1800 employees, about 500 employees were indentured children, ages 5–10, who the company provided food, shelter, and clothing in exchange for work (Pollard 1963, 1964).

Therefore, he decided to make some various reforms. Owen not just managed the workplace; he managed nearly every aspect of their life, like other factory owners. In comparison with other factory owners, the conditions under which Owen's workforce labored and lived were much more humane. His company store provided better goods just above wholesale prices. He added a second floor to each home, stressed cleanliness, regulated alcohol purchases, and educated workers (Harrison 1967). He accomplished these goals without using either religion or harsh punishments. Contrary to many expectations, the workers became sober, cleaner, healthier, and more productive, profits soared as a result (Doheny 1991; Dutton and King 1982). Another explanation for Owen's success could be that Owens had a quasi-monopolistic position in lace-making. Yet, despite annual returns of 15 percent with about 5 percent of investment paid in dividends, his partners remained nervous. Accordingly, he found a new set of investors, including the noted philosopher Jeremy Bentham (Muravchik 2002; Wren and Bedeian 2018). Mostly, Owens greatest contribution was, as E.P. Thompson (1963) noted (p. 884), that "Owenism was the first of the great social doctrines to grip the imagination of the masses in this period,

which commenced with an acceptance of the enlarger productive powers of steam and the mill.”

After the end of the Napoleonic Wars, the widespread unemployment, rioting, and social upheaval convinced Owen to propose the development of village models based on New Lanark (Browne 1936). These villages would consist of 1200 people settled on 1200–1500 acres. The inhabitants would live in one single square building with a common room for the kitchen and other social gatherings. Parents would raise children until the age of 3, then they would be raised jointly by the community (Harrison 1969). Owen’s ideal location was the United States because there was plenty of land. The other reason was religious – an irony in that Owen was a skeptic. The United States was in the throes of the Second Great Awakening, a period in which many American people, even President Adams, believed would usher in a period of plenty and peace called millennialism (Howe 2007). Millennialism was a fusion of the Enlightenment and the cosmos of biblical prophecy; one foot in the world of steam engines and the other in the Bible. Owen’s Christian wife pointed out to him the overlap between his views and the Bible. He soon took to quoting scripture (Browne 1936).

Arriving in the United States, he lectured up and down the East coast, gaining attention from the most prominent religious leaders. He purchased land from a religious sect called the Rappites. About 800 people flocked to the new community, but they were mostly intellectuals and thinkers lacking needed skills (Van Cleave 1951). There were also problems with not having enough materials to build the homes. The fields and gardens had been neglected and there were hogs all over the place. Mostly, the community could not agree upon anything. Rather than opening a new world, New Harmony ended with a whimper. The community survived but in a different form than Owen’s vision – at the expense of most of his fortune (Farrell 1938).

Owen returned to England where he found a friendlier welcoming than when he had left to start New Harmony. The repeal of the Combination Acts of 1824 allowed for the development of unions, and soon there was a burgeoning union movement called the Owenite movement (Claerys 1987). He continued to stress his beliefs toward socialism, setting up labor exchange where people could exchange labor time for labor notes. The movement gained momentum with middle class joining because of the Reform Bill of 1832. The outcome of this was the Grand National Consolidated Trade Union, a gigantic union that spanned the country with 500,000 members (Muravchik 2002), but the movement broke down fighting. Owen died in 1858 still a respected executive, but one who various communitarian endeavors had failed (Muravchik 2002).

Owen was both a rationalist and a romantic, a mix of the eighteenth and nineteenth century. His Enlightenment beliefs were deism, reason, associationism, and rationality. Ignorance and superstition caused most problems; science was the solution (Harrison 1967, 1969). Owen was also a romantic. The Romantic Movement stressed that nature could be conquered especially by the individualistic genius, which Owen, with great justification, believed himself to be. Technology and progress would create an abundance through the conquest of nature. Owen’s

romanticism and amazing ascent from poverty to wealth and admiration activated his narcissism (Harrison 1969).

His political beliefs, a combination of both rationalism and utopianism, have confounded historians over the years. E.P. Thompson (1963) noted that Owen did not care, place much thought in, or action in the nature of politics. Preferring, as his biographer G.D.H. Cole noted, economic determinism over politics as a focal point of change in society. He was also involved in various reforms in Parliament, despite his dislike for political expediency. He spent time trying to gain patronage from the intellectually gifted and politically powerful in both the United States and Great Britain. Both of which suggests pragmatism. As Claeys (1987, 1989) argues, Owen was a Tory, if we define Toryism as the politics of the unpolitical. Owen was also a radical, noting reform would fail as institutions were inert. Revolution would come from example, not violence. The Luddite movement shifted his views to voluntary reform through communitarianism. Some actually thought he had gone crazy. Owen's interest in the United States was his belief that institutions in the United States were more plastic (Bestor 1970). Owen encouraged factory owners to do the same as he did, settling upon the complete overhaul of society, eliminating almost everything that made British and American societies unique: free labor, division of labor, and capitalism (Calhoun 1993; Cole 1925).

Likewise, Owen's opinions on slavery have confounded scholars for many years scholars who have puzzled over his defence of slavery. Also causing puzzlement is the contradiction between Owen's enlightenment values and his views on slavery. Yet, contemporary observers noted similarities between Owen's and the slave system, such as Robert Wedderburn, a child from a slave mother. Owen articulated a paternalistic system similar to that of the slave owners, seeking to create protective structures from market forces. Slave owners compared their system of labor to the Northern version of free labor and noted that they provided slaves with cradle to grave protection (Foner 1970). Like many other free market critics, he admired the South as a legitimate alternative, believing slaves happier (Genovese 1976). However, Owen failed to recognize the brutal nature of slavery (Muravchik 2002; Stamp 1956; Taylor 2013). You might compare his ideas with Smith's, who seemed to have no objection to slavery in the Americas, observing, in *Wealth of Nations*, "we must not, however, upon that account, imagine that they are worse fed, or that their consumption of articles which might be subjected to moderate duties, is less than that even of the lower ranks of people in England." This happy outcome, Smith concluded, resulted from the fact that it was in "the interest of their master that they should be fed well and kept in good heart" so as to maximize their output (Smith 1937).

Owen's admiring of the paternalistic South reveals the greatest contradiction of Owen's thought. Despite Owen's radicalism, he was a reactionary. Just as Owen was creating a socialistic and communitarian society, other societies in the rural United States were becoming capitalistic, abandoning communitarianism (Sellers 1991). For instance, the community of Sugar Creek started out communitarian, but the values of the community dramatically changed, becoming more capitalistic and stressing private property, encouraged by economic development (Faragher 1986). Owen wanted to eliminate all this by going with, what some historians believed was,

an updated version of the poor house or, at best, a modernized version of a rural community (Claeys 1987).

Owen's Contribution

Owen made several notable contributions. Firstly, Owen anticipated the work of Stanley Milgram and Philip Zimbardo. Much like Milgram and Zimbardo, he downplayed traits, free-will, and stressed that circumstances could lead to behavior. Owen rejected the Christian thought of original sin. Instead, he believed that no two human beings are born alike due to the large number of variables genetically and through circumstance, creating infinite diversity. Therefore, situations, not genetics or inborn depravity, drove behaviors (Morton 1962). For example, if we place people in a positive environment, we should note that they would behave positively (Calhoun 1993; Browne 1936). Unlike Milgram and Zimbardo, he focused on positive aspects rather than negative (Harrison 1969). A principle difference between their ideas was the time period in which these men conducted their research (an Owenite idea). Owen wrote his during an optimistic time; Milgram and Zimbardo in a ravaged century. Owen, much like later management thinkers Mayo, Fayol, Herzberg, and Pfeffer, saw the workplace as a place of socialization and enjoyment. Owen was also a developer of human resource development, stressing education and moral improvement of his workers (Ashcraft 1993). However, there were several issues with Owen's work. One, Owen's ideas were primitive, moralistic, atheoretical, and inconsistent. Second, Harrison had difficulty with the idea that character is formed "for him and not by him," noting that Owen treated this slogan as if it were the great truth of the ages. Third, Harrison observed that a great many people did not treat Owen's social science as a relevant science due to Owen's moralizing.

Owen's Failure

Owen did not lead a revolution in management thought. He contributed, but most of his ideas withered and died. He faltered for four reasons. Firstly, he focused on issues that were not related to management. He attacked religion, the authenticity of the bible, and traditional gender roles and supported birth control, and taking children from parents – positions that would have won him few converts in nineteenth-century America (Thies 2000; Muravchik 2002). Secondly, he was too radical (Claeys 1987, 1989). Although workers in Great Britain were able to reach some class consensus and opposition, the picture in the United States was very different. Craftsmen wanted to be paid (Bestor 1970). Owen was unable to get enough skilled laborers to be interested in his work. Many of his followers were free riders. They were too interested in gaining acceptance into the new market economy (Howe 2007). People were unwilling to ignore money incentives. In fact, the contract that created the community did not define property rights, creating even more problems

(Bestor 1970). Even more telling, New Harmonians were unwilling to surrender their social status and promote true equality. Thirdly, planning was poor (Thies 2000). There was little anticipation for the demand for housing nor was there little planning for farming. Thomas Peers had to prod the overseeing committee to deploy at least 3 or 4 plows. Yet it should be noted, as Hatcher does, that Owen ran his business differently than he did his community by providing both wages and benefits (Hatcher 2013; Claeys 1989).

Another reason the community failed was Owen's narcissistic personality (Humphreys et al. 2016). It would be natural to assume that his narcissism prevented him from exercising sufficient leadership to hold the community together. Humphrey and his coauthors suggested that narcissists demonstrate high (as did Owens) paternalism. Although Owen held hope in humanity, in general, he had a poor opinion of his follower's abilities – an astounding viewpoint given the level of learning of many of the people in New Harmony. Owen took credit for what worked and blamed others for what did not. What is fairly remarkable is that Edmund Wilson (1940) falsely argued Owen tended to give recognition for success to workers rather than himself.

Owen's narcissism was a factor – but the founder of the Shakers, Mother Ann Lee, believed that she was the second coming of Jesus. Of the 50 or so backwoods utopias, most of them were religious in orientation. The success rate of these communities was low. Those utopias that succeeded tended to be religious in orientation, allowed for private property, and had anarchic governance (Thies 2000). New Harmony flunked each of those qualifications. Joshua Muravchik (2002) noted the largest reason for the failure of New Harmony was that social influences would produce a new man. Yet to produce socialism, people needed to be raised under the new social system. But if people were products of the old system how could they get to socialism? The direct failure of New Harmony was that socialists understood that the transformation of society had to come through political, and even revolutionary, action if it was to be successful (Feuer 1966).

Babbage and Ure: The Cyborgs

Charles Babbage (1791–1871) and Andrew Ure (1778–1857) had a differing viewpoint of society than Owen. Each understood that the world had changed. Industry was not a passing fancy. They believed in reason as the basis of authority. In addition, they constructed a place from which they could make out the “lineaments” of the factory system, downplaying politics. Yet the differences were stark. Owen, a radical reactionary, sought communitarianism as a solution. Babbage and Ure, as futurists, sought to use machines to transform workers into rational beings. Babbage and Ure did not articulate a full vision of management – focusing more on the use of machines only (Kumar 1984; Zimmerman 1997).

Charles Babbage, the preeminent polymath of his time, was a successful mathematician, management theorist, inventor, and statistician (Stigler 1991). The modern computer has its genesis in the work of Babbage. His work had a profound

influence on Frederick Winslow Taylor. However, Babbage was considered a crackpot, as his works were so complex that no one understood them. Frustrated, Babbage died a bitter man, hating humanity in general, Englishman in particular, and organ grinders most of all. Charles Babbage was born in London as the son of a banker. He matriculated at Cambridge University's Trinity College, studying mathematics, although such was the standard of his knowledge that he gained little new insights from his studies (Becher 1995). Instead, becoming friends with John Herschel and George Peacock, he embarked on a mission to improve the standard and usefulness of British mathematics (Moseley 1964). Soon after graduation, Babbage won acceptance to the Royal Society. Subsequently, scholars would separate Babbage's work on computer and management, something Babbage would have disagreed with. Babbage was interested in decision-making. As Ashforth (1996) noted, Babbage and Herschel also sought to transform society by breaking the alliance between religion and state and replacing it with rationality. Like the radical political philosopher Thomas Paine, who provided inspiration to Babbage and Herschel, both believed that all men could be engineers. In doing so, humanity would be better equipped to handle the various demands brought on by the new factory system and changes in the economy (Rosenbloom 1964; Wren and Bedeian 2018).

To aid in his goals, Babbage sought an efficient, universal, and visible mental technology by means of universities. However, Babbage worked in a system where the scholarly community resembled a country club. Unlike the more technically oriented universities that were to emerge in continental Europe, most particularly Germany, Britain's colleges and universities continued to emphasize skills (languages, history, etc.) that benefited the gentleman and the colonial administrator rather than the entrepreneur. Accordingly, Babbage and friends looked at the factory as a place where they could develop their new ideas. Both Babbage and Herschel were bedazzled through division of labor due to its efficiency and rigor, which placed unprecedented demands on machine tool shops turning into innovative places. So, he turned his attention to manufacturing and the development of his analytical machine, the first general computer. The analytic machine could be used to input data and used a binary system similar to George Boole's. Basically, the analytical machine had the workings of the modern computer (Ashworth 1996; Moseley 1964).

Two issues haunted his work. Firstly, there was social and cognitive distance between designers, machinists, and draughtsmen. The input cards existed for his machine but little else. Babbage, therefore, had to develop complex programming to deal with matters such as polynomials, iterative formulas, Gaussian elimination, and Bernoulli numbers. He lacked a team of programmers and it appeared that only his friend Countess Ada Lovelace understood the analytical machine. There were no existing technologies and programmers to service the machine. There were also the questions of whether the machine would overheat and on the difficulty of removing the punch cards (Wren and Bedeian 2018).

To understand what tasks his machine would need to undertake, Babbage turned his research to manufacturing, publishing his classic book on operations management called *On the Economy of Machinery and Manufactures* (1832). In fact, it was

a continuation of his interest in improving and developing machines. Babbage analyzed the economic principles of manufacturing, tools and machines, expenses, and operations. He also made notable contributions to the economic benefits of specialization, statistics, and price differentials. Babbage not only endorsed the division of labor, he also took the concept further than others, arguing that there was no need for a worker to have any more skills other than those directly related to his or her specific task. By minimizing training and maximizing each worker's capacity to complete a single task, a factory could combine such efforts in ways that would produce something much cheaper and quicker than could be achieved by an artisan. He also developed techniques of observations that would become standard place for later efficiency experts (Wren and Bedeian 2018).

Convinced of the productive benefits of the new factory system, Babbage also served as a spokesperson for the new industrial order. He pleaded with the Chartists to understand the benefits of the machines and stressed mutuality of interests between workers and managers. Babbage did recognize that the machine would potentially increase the power of capital over labor, leading to the creation of unwholesome working conditions and long hours. Yet, he opposed any attempt to stop the use of the machine, believing that in its scientific value as well as its role as a public good. He also rejected the use of trade unions on pragmatic grounds since the unions would drive locations, encouraging the relocation of factories and more automation. He did recognize the role of unions in terms of administrative grounds. Rosenbloom (1964) noted that Babbage had come across the primary problem within business – the contradiction between advances in technology versus the rights of workers. Is this so? That is how it appears, but the argument is that the need for productivity drove hours down just as the wealth of output increases real income. By 1850, as Hugh Cunningham (2011: p. 68) observes, management was “seeing the advantages in an intensive rather than an extensive use of labour . . . In this kind of environment children were more of a hindrance than a help.” Babbage's solution was to offer a bonus plan to align interests. However, he also recognized that the increase size and scope of factories would limit the ability of workers' efforts to lead towards the success of the firm.

Babbage died a frustrated man. Although he had been nominated for various honors including knighthood and a Baronetcy, he also had the reputation for eccentricity and public fraud. He also, along with other management thinkers, was attacked for making workers tied to the machines. In some ways, the newness of his viewpoints and his vast arrogance did him in. Babbage had a flair of narcissism in him – he wrote the Duke of Wellington – himself the champion of the aristocracy – that his machines were his to dispose as he saw fit since they more sacred than hereditary and acquired property. However, there was no denying his brilliance. Marx recognized that Babbage made a notable contribution in that he recognized the crucial role of machinery and division of labor in increasing productivity. Babbage was able to capture the interests of the engineering managers and sought automated systems that allow for cheaper employment (Becher 1995; Wilkes 2002).

Why did Babbage's innovations not take root during his lifetime? A reason could be Babbage himself, who definitely demonstrated various eccentric behaviors that

probably would have appeared odd to many people. After all, this was the same man, perhaps facetiously, who formed a group that sought to free its members from an asylum. It does not take much imagination to understand that people would have a difficult time accepting the seriousness of a man obsessed with the evils of organ grinders. Babbage proved a poor developer of followers. Unlike the latter Taylor and Mayo, Babbage did not leave a school of followers that would continue his work beyond his death nor did he seem able to curry favor among the most powerful members of society. True, Babbage did make connections, but despite his relationship with Sir Robert Peel, seemed to lack influential patrons. He was too early an adopter in computing. There was a distinct lack of parts, trained personnel, and support from society.

Andrew Ure was another polymath and, as Farrar (1973) noted, a major target in Marx's *Das Kapital* (Kumar 1984). He was also a doctor, scholar, chemist, scriptural geologist (i.e., used geology to research the Bible), and leading business theorist. Ure was born in Glasgow in 1778 to a cheese-monger. He earned his medical doctorate from Glasgow University. After a brief stint as an army medical doctor in 1804, he took a position at the Andersonian Institution, where he replaced the eminent chemist George Birkbeck. He stayed until 1839. During his time as a lecturer, he gained renown as an academic interested in innovation. Yet, he had a poor reputation in the scientific community. The great chemist, John Dalton, the founder of modern atomic theory, noted that Ure did not understand the difference between pure ether and the mixture sold by druggists that was a combination of ether and alcohol. Yet after the Napoleonic Wars, Ure sought to build an international reputation and toured France to absorb their science (Edwards 2001; Kumar 1984).

Much like Babbage, Ure came to management through his scientific accomplishments. The Andersonian institution was designed to educate the artisan class, unlike Oxford and Cambridge. From this college, the first classes of salaried managers were soon hired. Ure's most notable contribution to management thought was his 1835 book entitled *The Philosophy of Manufactures; or, An Exposition of the Scientific, Moral, and Commercial Economy of the Factory System of Great Britain*. The book had three general aims: to extol the great importance of manufacturing to countries against agrarian interests, denounce workingmen in forming groups, and persuade people about the humanitarian benefits of the factory system. Ure's principal focus revolved around the discipline and organization that Ure believed machines imposed on workers. As such, Ure's book did not attempt to define management by outlining, in a systematic way, the tasks and procedures that the new discipline would entail (Caton 1985). His analysis centered on machine imposed control. It did not describe a pure management system. Ure also defended the new factory system, noting that workers lived in better conditions, had more food, and were healthier than artisans had been in the past. He also noted that the factory system meant better working conditions than the previous handicraft system, where both irregularity of work and long hours of toil were the norm. In terms of the charge that factories had both child and female laborers, he noted, correctly, that the previous domestic system had employed both children and females (Wren and Bedeian 2018).

There were several notable issues with his book on manufacturing. Firstly, he was prone to exaggeration and character assassination, at several points calling his opponents atheists and whores. He also damaged his arguments through poor analysis. As Farrar (1973) noted, it was sufficient to state the factory workers were healthier – but he undermines his argument when he noted that the principal health problem was overconsumption of bacon. What he failed to note was the prime difference between the domestic system and the factory system that workers were now managed by nonfamily members, a difficult transition. However, Ure did imply that factory owners did owe workers decent conditions, schools, clean air, and decent housing. Whiting (1964) noted that there were early strains of the Human Relations in Ure's work.

Despite these issues, Ure had a clearer understanding of industrialization than did Adam Smith (Caton 1985). Writing in 1776, at the very dawn of the Industrial Revolution, Smith appreciated the benefits of the division of labor and the growing importance of fixed capital as a business cost. However, Smith understandably – given the time of his writing – failed to fully appreciate the revolutionary potential of new steam-powered machines. Nor did he properly appreciate the transformative role that management was to have in the post-1776 world, observing in *The Wealth of Nations* that “being the managers of other people's money rather than their own, it cannot well be expected that they should watch over it with the same anxious vigilance [as] . . . their own.” “Negligence and profusion,” he added, “must always apply” in such circumstances (Smith 1937).

What were the contributions of Ure and Babbage to management thought? Daniel Wren has praised them over the years in his various works, noting the primary contributions of both men, especially Babbage. Since the time of Marx, writers found key differences. Yet, there were key similarities as well. First, they recognized that machines were here to stay. This was not a common viewpoint at the time. Many people in Great Britain believed that the factory was merely a temporary intruder to the old industrial order. Consequently, as Zimmerman (1997) noted, Babbage and Ure's work could be seen as part of a concerted attempt to validate the new factory system. Indeed, they were among the writers who changed the meaning of the word factory, which had meant warehouse or production center, to a factory within a production system. Both understood what the factory would mean for labor – something that neither Smith nor Ricardo really developed. Babbage and Ure also sought to defend the factory system from various challenges. Agricultural life was hard, but based on tradition rather than the externally imposed control and discipline associated with factory life and the mill clock (Edwards 2001). There was little description or reason as to why the new order was needed. Babbage and Ure defended division of labor and the use of machines (Farrar 1973). Unlike Owen, who wanted to save man from the machine, Ure and Babbage sought to save the machine from man.

The problem with their thought was that it was not a true management philosophy – even if there are elements of management philosophy in their writing. It was also an inhumane philosophy to adjust men to machines. Ure and Babbage, unlike Taylor

and Mayo, did not seek to train and develop managers to handle social problems. Rather they believed that machines can control and discipline men. Their work also degraded the worker who long had control over his own tools and knowledge (Zimmerman 1997). The machine created value, so as Ure argued, capitalists should gain the value, since they owned the machines. Babbage agreed with Ure noting that machines controlled the floor (Wren and Bedeian 2018).

A primary difference between Babbage and Ure was over the role of specialization and division of labor. Ure, unlike Babbage, did not have the wide range of experience in factories, so he argued that division of labor was obsolete because factory productivity was due to machines. Babbage defended specialization of labor. Ure also disagreed with Babbage's views over the evolution of human thought – arguing that society was better through the administration of enlightened factory owners rather than (an implicit attack on Babbage) academics who base their decisions on outdated statistics. Ure also believed that the factory system would lead to better jobs, better conditions, and more productivity and would not lead to an accumulation of power that may damage workers. Babbage had a dissenting view and sought incentives to align interests. Ure doubted radical improvements to workers conditions they were simply a fact; Babbage believed in improvement. Babbage sought to make workers think like engineers; Ure saw them as docile and machine like (Rosenbloom 1964).

The limits of their thought could be summarized as follows. Ure believed that machines were the basis of capitalism – rather than division and commodification of labor or the market. His Frankenstein-like experiments on human cadavers indicated that humans could be fine-tuned with scientific methods. Ure also believed in the inherent good of the factory system – he was called the “Pandar of the Factory” by Marx, and scholars have called his viewpoints Panglossian. Babbage saw society as an evolutionary process that neither man nor machine could control. He understood that the machine produced tedium. Rather than the machine controlling labor completely, methods of management, such as bonuses, were needed to ensure compliance. Yet, unlike Frederick Winslow Taylor, both did not understand the need for an overall management philosophy, preferring a technological focus. They missed Taylor's key insight; capitalists control machines, but labor controls itself. The ability of machines to control men was limited, greatly over-estimating the ability of machines to monitor workers. Workers can destroy machines; they can misuse and abuse them; and the ability for machines to monitor worker misconduct was limited. After all, if a machine is damaged or destroyed, could a manager know which worker destroyed it? The major takeaway was that workers needed to be trained, educated, and compensated. Unlike Ure and Babbage, Taylor developed an integrative system of management. He also had a wide array of followers who were able to carry his research beyond his death. Unlike Ure, Babbage did provide the basics of Taylor – but he did not develop a true philosophy of industry. Both understood the need for a new mental framework, but did not provide it. They focused more on machines (Edwards 2001; Kumar 1984; Rosenbloom 1964).

Henri Fayol: The General

Unlike Owen, Babbage, and Ure, who came from Great Britain, Henri Fayol lived his life in France when it shifted from monarchy to republic to empire and back to republic. France, during his lifetime, witnessed crushing defeats (i.e., Sedan) to notable victories (i.e., First Battle of Marne). Similarly, during Fayol's lifetime, France's once unchallenged position, as continental Europe's preeminent economic power, was increasingly eroded by the rapid advance of science and industry in a unified Germany. Like Owen, Babbage, and Ure, Fayol never received the recognition that was his due during his lifetime. His own son supported the work of Taylor over his father. In fact, Fayol only started to receive major attention in 1949 when his book *General and Industrial Management* was translated into English. Previously, when people wished to read his work, it had to come through the British consultant Lyndall Urwick, who went so far as to say that Fayol did not write about management, but rather administration (Parker and Ritson 2011). Even worse, Fayol's ideas have been misunderstood and his work was viewed in light of Taylor's work, ignoring the obvious merit of Fayol's analysis. Consequentially, Fayol is one of those scholars who is widely known, but not necessarily widely read. Few really understand or even knew what his arguments were, tending to rally against the straw man version of his argument. However, every student of management, from the introductory class to college professors, has encountered, at one time or another, Fayol's ideas (Parker and Ritson 2005a, b).

Henri Fayol (1841–1925) was born to a noncommissioned engineer officer who was named superintendent of works to build the Galata Bridge in Istanbul, a bridge that remains an iconic landmark across the famed Golden Horn. However, despite his father's intelligence, skill, and ability, he was never able to reach a rank that was his due. This disappointment was a major part of the motivation that caused Fayol to become an engineer, business executive, and management theorist. Fayol also sought to create, based on these experiences, a philosophy to assist in France's recover from its disastrous defeat in the Franco-Prussian War. The war provided an impetus to change: leading to the separation of church and state in education, greater labor unrest, and increased focus on technical skills. Yet, it was also true that the emergence of the Third Republic provided a greater sense of stability than what had existed during the revolutionary period, the Bourbon restoration, and the Napoleons. His father recognized that his son needed an education. Fayol graduated from the *École Nationale Supérieure des Mines* in 1861 majoring in mining rather than metallurgy. He started working at the "Compagnie de Commentry-Fourchambault-Decazeville" as an intern, rising to director in 1865 and then managing director in 1888. By the time Fayol took over the firm, however, it was a faltering company (Wren and Bedeian 2018). Indeed, he was initially appointed to sell off the struggling company. Instead, however, he turned the company around by selling off failing mines and acquiring new mines that had both coal and iron deposits. He also built a business line around smelting iron to raw steel. By the time he retired, the company was one of the largest and strongest in Europe despite the destruction of several mines during the German invasion of France. He made money for the

shareholders and provided a higher standard of living for his workers. Whether the advancement of the company was due to his managerial acumen, the end of the Long Depression (a period of slow global growth and depressed prices that lasted from 1873 until the late 1890s), the increase of value of iron ore, or some combination thereof, scholars, even his defenders, remain uncertain. However, Fayol had an excellent reputation as managing director, earning many laurels (Wren 2001).

These accomplishments came to him despite, not because of, his technical training. Fayol recognized soon after he became a manager that he lacked the skills to handle the industrial scope of the company. Consequently, he began writing down observations of managerial issues and solutions. For example, he noticed that work had stopped for a day due to a horse breaking a leg. The livery stable-keeper lacked the authority to purchase a new horse even though he was responsible for the horse. Fayol recognized that authority and responsibility should go hand in hand (Reid 1995). He also recognized that in order to increase motivation, jobs needed to be redesigned to make them less monotonous. He also saw the need to give workers more responsibility to make the job more meaningful and impactful. Fayol was a pioneer in identifying the social and organizational benefits from work teams. In addition, Fayol recognized that — although technical skills were important to firm success — managerial ability was even more important. In fact, as one rose throughout the organization, need for managerial skills increased; an outcome that was also evident as small family firms were replaced by large-scale enterprises. He recognized the need for management theory and this need was all the more acute because the future belonged to managers (Pryor and Taneja 2010; Voxted 2017; Wren and Bedeian 2018).

What were Fayol's contributions to management thought? His first notable contribution was the recognition that there were six important skills for successfully running a business: administrative skills, technical skills, marketing skills, financial abilities, safety abilities, and accounting abilities. Fayol's conception of management, as a distinct field from technical skills, was an important contribution. Wren (2001) noted that firms, such as Andre Citroen, which promoted technical skills at the expense of managerial skills, performed poorly — proving Fayol's point. He also identified that there were five functions of management: planning, organizing, commanding, coordinating, and controlling. The principle focus was on organizing. Fayol understood the need for human resource management and that workers were the company's main productive resource. In the first chapter of most principles of management textbooks, Fayol's functions are still taught (Voxted 2017). He was also prescient in that he saw how workers, rather than being a cost to be minimized, could be the most important asset to the firm, anticipating the development of strategic human resource management nearly 80 years later. Fayol's most ambitious contribution was the 14 principles of management — ambitious since (to borrow Clemenceau's comment on Wilson's 14 points) the Lord almighty only had Ten Commandments. The 14 principles consisted of the following: division of work, authority, and responsibility, discipline, unity of command, unity of direction, subordination, remuneration, centralization, scalar chain, order, equity, stability of tenure, initiative, and esprit de corps. Promoting team spirit will build harmony and unity within the organization (Reid 1995).

These ideas were notable for several reasons. Firstly, they formed that basis for a normative theory of management serving as a development point for later theorizing. Secondly, it was an overall philosophy of management – one that could be used to describe management from top-level managers on down. This is particularly important since it provides coordination for specialized activities. Finally, since the theory discusses how managers should deploy resources it forms a basis of what would become strategic management. Fayol also anticipated several trends including behavioral and transformative leadership, agency, contingency and systems management, and the knowledge-based view of the firm (Parker and Ritson 2005a, b; Spatig 2009).

Did Fayol really produce a theory of management? Fayol's (1949) definition of theory "was [the] collection of principles, rules, methods, and procedures tried and checked by general experience." If this definition of theory was correct, then Fayol did create a theory. Fayol's formulations were certainly a comprehensive philosophy of management that could be used in a wide variety of contexts besides military and industrial. But he fell short of theory as we properly define the term. The modern statement of theory is a statement that explains why and makes a prediction on various phenomena. Importantly, the "why" statement is one that usually emerges from a body of knowledge and which has some generalizability (Bacharach 1989).

Did Fayol explain and make predictions? In my view, he did not. This is especially true since his conclusions can lead to alternative explanations that may be equally valid. Firstly, it is unclear whether his practices actually saved his company. There are other explanations for the company's growth including improved economic conditions. Secondly, his account of the horse – in which he claimed that workers were unable to address issues with the horse due to a lack of authority – could be due to hazing rather than poor administration. After all, it is not uncommon for workers to make it difficult for first time managers. Thirdly, he was unclear with his use of terms, making it difficult to develop his constructs. The fact that his thoughts were translated into a different language (English) exacerbates this problem. Based on this definition of theory, we can perhaps conclude that Fayol used the term theory to gain legitimacy. In fact, Fayol admitted as such – since there was no theory of management, how could it be taught in schools. Fayol provided a useful vocabulary and structure of terms, which allowed for subsequent theoretical development. In short, he did what George Homans did in the *Human Group*, take a bunch of observations, name them, and provide a conceptual scheme that had practical use (Homans 1984).

Fayol left an extraordinary record as he defined managerial actions and skill. More so than even Taylor, he truly defined managerial endeavors, and unlike Taylor, he focused more on the principles of organization and coordination. Taylor, despite his writings on incentives and training, remained very much an engineer with a primary focus on the plant floor and an inability to see over the plant floor. Fayol transcended the plant floor and saw the overall picture of the organization. From this perspective, Fayol, and not Taylor, could be seen as the most influential management thinker in history since his was an overall management theory. Maybe even more than Taylor's, Fayol's theories have stood the test of time – many of his ideas are still found in the introductory books, and his other ideas, such as esprit de corps, are the basis of a great

many ideas in management. Fayol could be seen as the father of strategic management, as many of his ideas formed the basis of that field (Fells 2000).

Yet, Fayol seems to be underrated. In Bedeian and Wren's (2001) list of influential management texts, Fayol's *General and Industrial Management* is ranked 16th; a high ranking to be sure, but one that probably underestimates the influence his book had. Heames and Breland (2010), in their list, rank him fifth: also, arguably an underestimation. There are several important explanations for Fayol's comparatively modest ranking. Firstly, Fayol wrote in French – and did his work primarily in France – at a time when Great Britain, the United States, and Germany were the world's dominant commercial powers. In addition, Germany had become the major place for learning as universities worldwide adopted the German scientific model, a model that emphasized technical and applied skills. Had Henri been a Henry or Heinrich, his work would have arguably received more recognition. The First World War also prevented his work from receiving a large audience as wartime demands were placed. Finally, Fayol did not leave a cadre of followers to carry his work beyond his grave.

Part of the problem with the criticisms related to Fayol is that they often have little to do with what Fayol wrote and more to do with the interpretation that Gulick and Urwick gave to his writings. By contrast, few people read Fayol – they mostly hear about him from other scholars or viewed him through the prism of Taylor's work. In addition, academic scholars often dislike the practical orientation of his work. For instance, Herbert Simon attacked his theory for being based on observation – noting that, despite his success as a manager, there is no reason to believe that his propositions would stand up to analysis (Smith and Boyns 2005). Simon similarly doubted that any principles of management can be discerned, arguing that the importance of experience was not an important indicator of theory development. In contradiction, others – such as Ralph C. Davis, Harold Koontz, and Wren (1995) – have responded by suggesting that Simon underestimated the value of practical experience and practicality (Parker and Ritson 2005a, b).

Another charge that has been labeled against Fayol was the idea that he advocated universal principles that could not be empirically supported. This is a common criticism that has been labeled against Fayol over the years. Brunsson (2008), for example, argues that whether you view management as contingent or universal depends upon what perspective of the organization you view from, noting that Taylor was a contingency thinker since he understood the firm from the ground up and Fayol was a universalist since he viewed downward. Brunsson goes further to argue that universalist assumptions and normative theory have created various fads in management thought, ignoring the complexity of thought. Fayol's thinking was, in short, too ambitious (Brunsson 2008). In noting such criticism, Wren noted that although some criticized the work of Fayol as being simplistic; there were others who found it useful. In reality, they are both. What Fayol did was to provide a rudimentary understanding and vocabulary to management when none had really existed, filling a much needed vacuum. Of course, it would appear simplistic in comparison with latter works. Just as we have moved beyond Adam Smith and have provided more specificity to his framework, so we have with Fayol. His work was

based on his successful experiences providing a greater sense of legitimacy than theorizing based on abstract ideas (Wren 1995). Perhaps the reason why managers struggle is less to do with the body of knowledge we have acquired and more on the idea that we do not actually teach that body of knowledge. We no longer research things that offer practical advice. In treatments, such as Gabor's work, the Carnegie school is praised as they made management more scientific. Yet, that could also be considered a curse – stripping management from a practical footing (Miller 2007).

Contrary to many of his critics, Fayol was in truth not a universalist. Instead, Fayol wrote his ideas with the view that they be applied in a flexible fashion, accepting that they would not have the same validity in all circumstances. For instance, Fayol would oppose such modern ideas such as “zero tolerance” punishments (i.e., a punishment should be applied for a particular action no matter what the circumstances), noting that we should consider the circumstance and purpose (Schimmoeller 2012). He also understood that the type of skills required vary according to both a manager's position in the organization and the size of the company. He is obviously innocent of the charge of universalism. Of course, the historical debate over contingency versus universal principles ignores the issue as to whether a firm has a choice to be different or not. There is a tremendous amount of literature in the institutional and resource dependence areas that firms do not have control over their internal processes and will appear to be similar due to mimicry. The adoption of Affirmative Action plans would be an example of this outcome.

Some modern management scholars have challenged Fayol's idea that management has five core functions. Prominent among these critics are Fred Luthans, Fred Mintzberg, and John Kotter. Each notes that managers were unlikely or unable to perform such tasks, or, to some extent, were too simplistic in scope to have meaningful applications. Luthans, Mintzberg, and Kotter were also critical and believed that Fayol had developed his ideas through normative theorizing rather than observation, contradicting previous generation of scholars, who believed the opposite. Brunsson argues that empirical studies indicate that management is a mish-mash of far from orderly activities. This is, however, not the case. As Wren (1990), Fells (2000), and Lamond (2004) have demonstrated, management activities tend to be very similar and there is a distinct overlap between the ideas of Fayol and his critics. Lamond went further, finding that Fayol's functions are what managers wish to do, and Mintzberg what they actually do.

One problem in estimating Fayol's original contribution is that Fayol and Taylor are often compared to each other. Some scholars, such as Wren and Bedeian (2018), have argued that Fayol and Taylor were complements to each other. Berdayes (2002) suggests that Fayol and Taylor were fellow travelers agreeing on the need for hierarchical division of labor, the use of incentives, and emphasis on work processes. George (1972) noted that Taylor wanted to change management from the shop room floor; Fayol from the boardroom. Other scholars, such as Donald Reid (1995), have argued that they were competitors. Still, others, such as Voxted (2017), Brunsson (2008), and Parker and Riston (2005a), dismiss the question entirely. In fact, Parker and Riston argue that Fayol has become a fellow traveler of Taylor even though the two men wrote in very different contexts about very different issues. Pryor and

Taneja (2010) reduce Fayolism to an offshoot of Taylorism. Yet, it is also ahistorical to dismiss the comparison since contemporaries, such as de Freminville (and Fayol), made it. However, such a division of competitor and complement is an unwarranted dichotomy as they could be both.

We have noted where Fayol and Taylor agreed and where they complemented each other. How did they differ? Taylor viewed things as a mechanical engineer. Accordingly, he believed that inefficiency was due to variance from a correctly designed and performed norm. Accordingly, Taylor sought to eliminate variance by standardization of material and performance, a focus that reflected the fact that he came from the shop floor. Fayol, whose background was from mines, did not worry much about standardization. Due to the physical isolation of men work, there was little direct supervision of workers in mines. Rather, what he sought was ingenuity, adaptability, and productivity of the workers. Taylor believed that managers should be technical experts who could perform the tasks better than their subordinates could. Fayol disagreed – if you have many bosses based on skill, how can you coordinate? Instead, Fayol envisioned an organization of experts who benefitted from a general management education. Although scholars have argued that Fayol was authoritarian and paternalistic, he also sought ways to undercut manager's domination by clearly stating what he expected from managers (Brunsson 2008).

Fayol and Taylor also differed on compensation issues. The standard textbook views Taylor and Fayol as believing in monetary incentives and romantic rationalists. Taylor was a rationalist who stressed extrinsic benefits, such as pay. In contrast, Fayol placed tremendous emphasis on building loyalty and an affective connection to workers. There was little in Taylor's writings on how a firm should compete and ownership issues. Fayol's work was focused on the orderly integration and arrangement of the organization. In fact, Fayol's work could be used to implement Porter's generic strategies. Fayol also understood that there were problems between principals and agents. He understood that the board was too tied to the market, too interested in creating profits, and that profit was a primitive means of judging corporate performance – anticipating Agency Theory (Parker and Ritson 2005a, b; Reid 1995).

Was Fayol more influential than Taylor? Probably not due to the factors above, but the largest reason was that Taylor changed the field from one of random observations to one based on the scientific method of testing, hypotheses, and replication. More than anyone, Taylor demonstrated that management should be taught and developed as a science, rather than a humanity, such as history. Taylor's use of science was something that fit the zeitgeist that placed an emphasis on science, objectivity, and replication. Taylor made the study of management into a legitimate field of research. Even today, when there is debate over whether his ideas work or not, we still use Taylor's methods of science to research issues. This could not be said for Fayol's ideas. Based on this contribution, Taylor truly "made" management; not in the sense that he was original or he created a field where none existed, but he made management a legitimate field of study (Drucker 1974).

Fayol's contribution was important as well, but different. Brunsson (2008) argues that the principal benefit from Taylor was that his was a top down approach and that

the true success of management was organization efficiency. Yet Fayol understood that this viewpoint ignores the fact of how firms could compete if everyone is efficient – such an approach would reduce the economic benefits of owning a firm. Although Fayol did not use the term effectiveness, he understood that organizations must have a united mission to direct efforts towards a common goal. Fayol understood that the goal could vary from firm to firm, and so would the management forms they would take. How firms achieve the common goal is what makes firms survive. They also create diversity. In fact, a vast amount of literature expresses the need for firms to be different whether it is in pricing, resources, or simple location. In other words, the principles of management Fayol made are universal, but how they are implemented will be dependent on situations, a point that Fayol recognized. Taylor's inability to see above the plant floor obscured this vision. This is not to take away the brilliance or contribution of Taylor's views, but Fayol extended management to the firm level while Taylor addressed the primary problem of the early twentieth century, namely labor. Taylor sought to use science to achieve cooperation. The great powers were primarily concerned with ensuring production both for imperial reasons and restive workers (Kennedy 1980). Fayol anticipated strategy, but strategic concerns did not emerge until after the Second World War (Brunsson 2008).

Conclusion

Owen, Babbage, Ure, and Fayol made many contributions. Owen produced elements of what would become human resources and organizational behavior, focusing on worker training, incentives, and job design. Owen also anticipated the modern idea of work-family spillover. Babbage produced the beginnings of scientific management. Both Ure and Babbage produced the forerunner to operations management and Fayol, strategic management. Yet they did not produce a legitimate and influential approach. Owen focused on other areas, often at the expense of his writing on management. In addition, his major management project, New Harmony, was doomed to failure. Likewise, Babbage lacked the personal skills, temperament, and devotion to management to make a lasting contribution. If one looks closely, Babbage did provide a system similar to that of Taylor – but this system was in a morass of other ideas, which were considered crackpot. History has a long list of crackpots like Babbage, who did not get their due because of the newness of their ideas. It also has an even longer list of people who were just crackpots. We take Babbage seriously because with hindsight, we know he was correct. But can you really take someone, like Babbage, seriously if you were a contemporary? Andrew Ure was not a true management thinker – he placed more concern on what became operations. Finally, Fayol stressed issues that were not in vogue. Another issue that held these men back was the fact that management was not considered necessary until later in the industrial revolution. Factories were just a passing fancy. In the United States, where Taylor worked, there was an understanding that management was needed to handle the vast new underclass that was being created. Likewise, a

new middle class could become managers. Taylor found a fertile and interested country for his ideas.

Cross-references

- ▶ [Economic Foundations: Adam Smith and the Classical School of Economics](#)
- ▶ [Intellectual Enlightenment: The Epistemological Foundations of Business Endeavor](#)
- ▶ [Neo-classical Thought: Alfred Marshall and Utilitarianism](#)

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