

# The Evolution of Management Thought



## Overview

The vast majority of workers are employed by some sort of an organization. They travel to work each morning and put in a certain number of hours on the job, and then they go home. They usually work with a number of other people, and there is a separation between their work and the rest of their lives. It is hard for modern-day workers to realize how much the nature of work has changed from what existed not too long ago. Over the past 200 years, almost all nations have evolved from societies in which most workers were self-employed, either as farmers or as independent craftsmen, into ones in which almost all workers are employed by organizations. A little more than 100 years ago, farmers still constituted more than one-third of the total U.S. workforce. Many other people worked as skilled craftsmen for themselves or in small shops. In 1849, the largest factory in the United States was run by Chicago Harvester and employed 123 workers. The number of people working in manufacturing in the United States quintupled from 1860 to 1890. By 1913, there were more than 12,000 people employed in a single Ford factory in Michigan. This growth in the number of people working in organizations was accompanied by a growth in interest in management. Management techniques had not been very important when most organizations were small, but suddenly there was a real need for knowledge about the best way to manage large numbers of employees and complex organizations.

Management theory has expanded greatly over recent decades, fueled by new ideas that have helped countless cohorts of professional managers become successful. There has been a proliferation of management theories

## 20 Introduction

and a development of various schools of management, each purporting to provide the best approach to management.

This chapter will present a history of management and management thought from prehistory to the present. The chapter will end with a brief look at how librarians have used and adapted general management principles in libraries.

A hundred years ago, most organizations were relatively small, and their focus was upon productivity and techniques, with little analysis of the underlying principles of management. Since then, organizations have grown in size and multiplied in numbers.

Today's management has evolved from earlier practices, principles, and research. An examination of the history of management provides context and background for current management thought. Being familiar with the history of management is a good way to learn what has worked in the past and to avoid repeating mistakes from the past. No student of management thought can afford to be unfamiliar with the contributions of the major pioneer thinkers in the field. Although we have moved away from some of the practices they once advocated, their ideas are still the basis for the development of many management techniques currently in practice, and their contributions also provide insight into the theories that are the essence of management today.

Although management as a formal field of study is less than 150 years old, there was a need for managing long before its principles were studied and codified. From the time of the earliest civilizations, management techniques were being employed widely.

### MANAGEMENT IN ANCIENT HISTORY

As early as 3000 B.C.E., the Sumerians kept records on clay tablets; many of those records applied to the management practices of the priests of Ur. Early Babylonia implemented very strict control of business enterprises with its Codes of Akkadian and Hammurabi. The Hebrews' understanding of hierarchy and of the importance of delegation is reflected in the Old Testament, particularly in Exodus 18:25–26, in which Moses, “chose able men out of all Israel and made them heads over the people, rulers of thousands, rulers of hundreds, rulers of fifties, and rulers of tens. And they judged the people at all seasons; the hard cases they brought unto Moses, but every small matter they judged themselves.”

Construction of one pyramid in Egypt around 5000 B.C.E. was accomplished by about 100,000 people working for 20 years. It is obvious that such a feat could not have been completed without extensive planning, organizing, and controlling. Around 2000 B.C.E., the principle of decentralized control was introduced, by a vesting of control in the individual states of Egypt; it was only later that the pharaoh established central control over all.<sup>1</sup> There is also evidence that Egyptians employed long-range planning techniques and staff advisers. Similar records exist for activities in ancient China. In the China of 3,000 years ago, there were “concepts that have a contemporary managerial

ring: organization, functions, cooperation, procedures to bring efficiency, and various control techniques.”<sup>2</sup> The staff principle, later perfected by military organizations, was used very effectively by Chinese dynasties as far back as 2250 B.C.E.



## What Do You Think?

Many of the things that we think of as modern and cutting edge have been used in the past. An article in a recent issue of *Harvard Magazine* dealt a serious blow to the Hollywood version of pyramid building, with Charlton Heston as Moses commanding the pharaoh to “Let my people go!” Mark Lehner, an archeologist, has been studying the building of the pyramids and has found evidence that pyramid workers were not slaves at all, at least not in the modern sense of the word. Lehner believes that the pyramids were built by “a rotating labor force in a modular, team-based kind of organization.”

Lehner’s discovery provides a good example of how many approaches or techniques that we think are very modern are really much older. Can you think of any other instances of seemingly new developments that have really been taken from the past?

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Jonathan Shaw, “Who Built the Pyramids?” *Harvard Magazine*, July–August 2003, 42–49, 99.

Although the records of early Greece offer little insight into the principles of management, the very existence of the Athenian commonwealth, with its councils, popular courts, administrative officials, and board of generals, indicates an appreciation of various managerial functions. Socrates’ definition of management as a skill separate from technical knowledge and experience is remarkably close to our current understanding of it. The Greek influence on scientific management is revealed in their writings; for example, Plato wrote about specialization, and Socrates described management issues.<sup>3</sup> In ancient Rome, the complexity of a huge empire demanded the use of management techniques. In fact, much of the secret of the Roman Empire’s success lay in the ability of the Romans to organize work and people for the cause.

Many ancient leaders were not only charismatic individuals but skillful organizers as well. Hannibal’s crossing of the Alps in 218 B.C.E., with his Carthaginian troops and equipment, was a remarkable organizational feat. At about the same time, Qin Shi Huang Di, the first emperor of China, was able to organize hundreds of thousands of slaves and convicts to create his burial complex at Xian and to connect portions of the Great Wall. He also unified warring factions and standardized weights and measures as part of his centralization initiative. Thus, the origins of many of the techniques that are employed today in modern organizations can be traced to ancient times and civilizations.

## THE EFFECTS OF THE INDUSTRIAL AGE ON MANAGEMENT

As society became less agrarian, there was an increasing interest in management. The development of technology during the Industrial Revolution, at the end of the nineteenth and the beginning of the twentieth centuries, produced a factory system that brought workers into a central location and into contact with other workers. It was during the development of effective and efficient management control of these newly founded organizations that many management concepts began to emerge. Adam Smith, in his writing, particularly in *The Wealth of Nations*, described division of work and time-and-motion studies as they should be employed in organizations. Other writers of the period, including Robert Owen, Charles Babbage, and Charles Dupin, wrote about the problems of management in factories.<sup>4</sup> Many of the principles that were later reemphasized and further refined in the scientific management approach and the human relations approach were first developed during the eighteenth and nineteenth centuries.

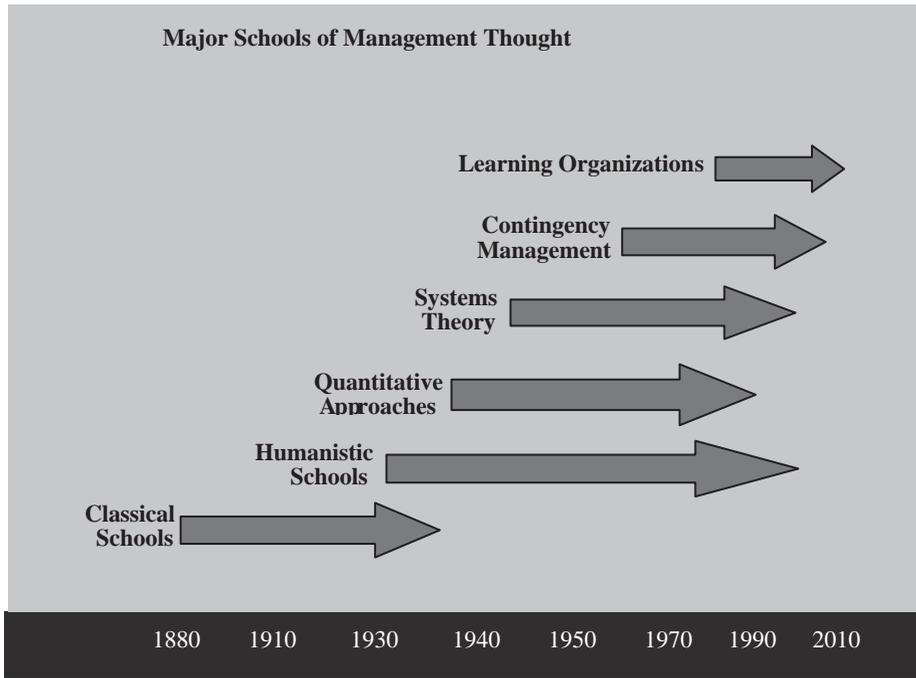
Widespread interest in management grew in the late nineteenth and early twentieth centuries as the factory system increased in size and complexity. The number of people employed as managers grew tremendously, and there was a rising demand for solutions to problems encountered in the workplace. At this time, the study of management became more systematized and formal, and various approaches or so-called schools of management began to be developed. These schools are theoretical frameworks that are based on different assumptions about people and organizations. Each of them reflects the problems and the best solutions of the time in which they were developed.

A discussion of the various schools is always a bit confusing, because some writers place a particular idea, theory, or observation into one school, whereas others might place it in a different, though still aligned, school. There is also no agreement about the number of schools of management, because experts divide and subdivide the schools in different ways. The complexity of the interrelationships between the many schools was once characterized as “The Management Theory Jungle,”<sup>5</sup> and, indeed, sometimes the descriptions of the schools seem to be as impenetrable as a jungle. The next section of this chapter will provide a brief discussion of the most important of these schools of thought. To simplify the discussion, not every school, nor all of their subdivisions, will be covered. This section will cover only the six major ways of thinking about management: the classical perspective, the humanistic approach, the quantitative perspective, the systems approach, contingency management, and learning organizations. These schools and their approximate dates are displayed in figure 2.1.

### CLASSICAL PERSPECTIVES

The earliest management schools are often categorized as being classical perspectives. These schools all arose in response to the growth in size and number of organizations, and each sought to make organizations more efficient by applying a systematic, more scientific approach to management.

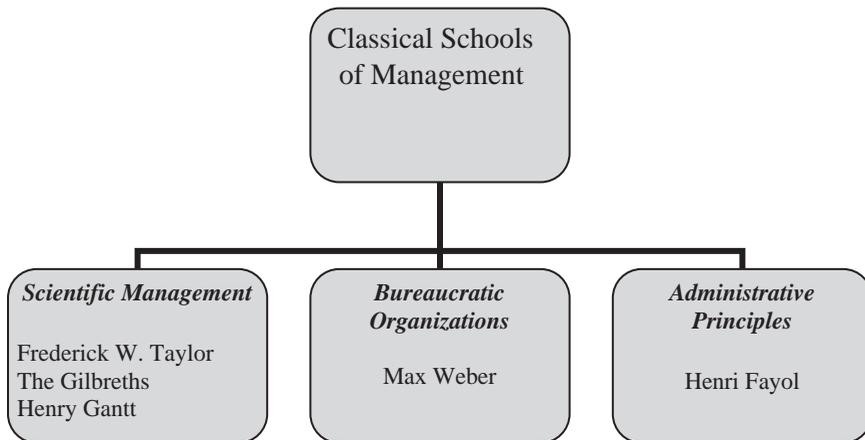
**Figure 2.1—The Major Schools of Management Thought**



Before the advent of the classical perspectives on management, most managerial decisions could be described as “seat-of-the-pants.” Every manager drew on past experience in managing, but there was no attempt to find out if one way of doing a job was better than another. Workers were hired with little thought about matching their skills to the jobs that needed to be done, and new workers usually were not given any systematic training. There was no standardization of tools or processes. The writers of the classical perspectives attempted to bring a more systematic approach to management by proposing more efficient and effective ways to manage. Although these schools were developed in different places, they share many common characteristics. The most important of these schools are the scientific management, the bureaucratic, and the administrative principles schools. Each of these schools will be described separately.

### **Scientific Management Movement**

Frederick Winslow Taylor (1856–1915), an American, is considered to be the father of scientific management. The basic assumption of this school of management is that workers are primarily economically motivated and that they will put forth their best efforts if they are rewarded financially. The emphasis is on maximum output and on eliminating waste and inefficiency. Planning and standardization of efforts and techniques are viewed as important factors in creating a more efficient organization. Taylor thought managers should:

**Figure 2.2—Major Schools Contained in the Classical Perspective on Management**

- Develop a series of rules and routines to help workers in their daily work.
- Replace the rule-of-thumb method by finding the most efficient way.
- Select scientifically, and then train, teach, and develop the worker.
- Provide wage incentives to workers for increased output.<sup>6</sup>

Efficiency was Taylor's central theme. As a steelworks manager in Philadelphia, Pennsylvania, in the United States, he was interested in knowing how to get more work out of workers whom he considered to be naturally lazy. This attitude, he speculated, was fostered by poor management. He observed "when a naturally energetic man works for a few days beside a lazy one, the logic of the situation is unanswerable. 'Why should I work hard when the lazy fellow gets the same pay that I do and does only half as much work?'"<sup>7</sup> Taylor proposed using scientific research methods to discover the one best way to perform a job. He felt that faster work could be assured only through enforced standardization of methods; enforced adaptation of the best instruments available for the work; adoption of good, hygienic working conditions; and enforced cooperation.

Even though Taylor was the most important advocate of the scientific management movement, others contributed to the growth of the scientific method, including Frank (1868–1924) and Lillian (1878–1972) Gilbreth. Frank, an engineer, and Lillian, who held a doctorate in psychology, were concerned with the human aspects of managing, and they expanded the concepts of time-and-motion studies. They tried to identify the one best way to perform a task in the most comfortable and time-efficient manner. (The Gilbreths are also famous for being the efficiency-expert parents in *Cheaper by the Dozen*, a book written by two of their children.)

Henry L. Gantt (1861–1919), experimenting at about the same time, developed the task-and-bonus system, which was similar to Taylor's awards incentive. Gantt's system set rates of output; if those rates were exceeded, bonuses were paid. In some cases, when his system was adopted, production more than doubled. The Gantt Chart is still widely used in production schedules

and is used in many libraries and information systems to chart and calculate work schedules. Along the horizontal axis of the chart, Gantt placed the time, work schedule, and work-completed aspects; along the vertical axis, he placed the individuals and machines assigned to those schedules. In this way, the path to completion could be easily calculated.

In its early development, scientific management had little concern for the external environment of the organization and was almost exclusively concerned with internal operations. It also placed little emphasis on the needs of the workers; instead it focused on producing better results.



### Try This!

Imagine that you are a director in a large, urban public library in the early twentieth century and are interested in all of that newfangled management theory that is being propounded by your contemporaries, Frederick W. Taylor, the Gilbreths, and Henry Gantt. What impact do you think their ideas might have had upon your way of managing? Which of their principles might you have used in your own management? Would some of these principles be harder to implement in a library than in a factory setting?

## Bureaucratic School

At about the same time that scientific management was developing in the United States, the concept of bureaucracy was taking form in Europe. Max Weber (1864–1920), a German sociologist, introduced many of the theories of the bureaucratic school. He was the first to articulate a theory of the structure of authority in organizations and to distinguish between power and authority and between compelling action and voluntary response. He was more concerned with the structure of the organization than with the individual. Most of his writings and research related to the importance of specialization in labor, of regulations and procedures, and of the advantages of a hierarchical system in making informed decisions. Weber characterized a bureaucratic organization as an ideal type of organization, in which:

- Labor is divided with a clear indication of authority and responsibility.
- The principle of hierarchy exists.
- Personnel are selected and promoted based on qualifications.
- Rules are written down and impersonally and uniformly applied.
- Promotion into management is only through demonstrated technical competence.
- Rules and procedures ensure reliable and predictable behavior.<sup>8</sup>

Although the term *bureaucracy* is sometimes used pejoratively, and is often associated with mindless rules and red tape, Weber's concept of the ideal structure has been extremely powerful. Bureaucracies work well under many

## 26 Introduction

conditions, especially in stable organizations in stable environments. Many large organizations, including many libraries, have been structured to reflect Weber's bureaucratic principles.

### Administrative Principles

Another movement also began to develop in France about the same time as Taylor's experiments in the United States. Using some of the same scientific management methods, it sought to establish a conceptual framework for, as well as to identify principles and build a theory of, management. The father of the administrative principles (also sometimes called the classical or generalist) movement was a Frenchman, Henri Fayol (1841–1925). Fayol took a scientific approach, but unlike Taylor, who began by looking at the workers on the job, Fayol looked at administration from the top down. As an industrialist, he concentrated on the roles that managers should perform as planners, organizers, and controllers. He believed that managers needed guidelines, or basic principles upon which to operate, and he emphasized the need to teach administration at all levels. He was the first to write about the functions of management, including planning, organization, command, coordination, and control. He devised a set of principles, which can be seen in table 2.1.

**TABLE 2.1** Fayol's 14 Principles of Management

Division of work	There should be a clear division of duties. Breaking jobs into smaller pieces will result in specialization. Management should be separate and distinct.
Authority	The authority that individuals possess should be equal to their responsibility. Anyone responsible for the results of a task should be given the authority to take the actions necessary to ensure its success.
Discipline	There should be clear rules and complete obedience to behavior in the best interest of the organization.
Unity of command	An employee should receive orders from only one superior, in order to avoid confusion and conflict.
Unity of direction	There should be one head and one plan, in order to ensure a coordinated effort.
Subordination of individual interest to the general interest	Employees should place the organization's concerns before their own.
Remuneration of personnel	Pay should be fair.
Centralization	Centralization is the most desirable arrangement within an organization.

*(continued)*

TABLE 2.1 (continued)

Scalar chain	Each position is part of a vertical chain of authority (the scalar chain). Communication should move up and down this chain of command.
Order	To avoid conflicts, there should be a right place for everything and everyone in the organization.
Equity	Equality of treatment must be taken into account in dealing with employees. Justice should be tempered with kindness.
Stability of tenure of personnel	Long-term stability for workers is good for an organization.
Initiative	Incentive rewards must be provided to stimulate production.
Esprit de corps	Develop a strong sense of morale and unity. Communication is the key to a satisfied working group.

Source: Henri Fayol, *General and Industrial Management*, trans. Constance Storrs (New York: Pitman, 1949), 22.

Like Taylor, Fayol believed that workers were naturally lazy, resisted work more effectively when working in groups, must be subjected to discipline, could be best motivated by the incentive of higher wages, could work better when properly instructed, and differed markedly in native ability and capacity.

All three of these schools of the classical perspective emphasized consistency, efficiency, and clear rules, and they all subordinated the needs of the worker to that of the organization. They paid little or no attention to outside environmental factors. The greatest criticism of these early schools is that they place undue emphasis on the formal aspects of organization and neglect entirely the effects of individual personalities, informal groups, intraorganizational conflicts, and the decision-making process on the formal structure. They also have been criticized as leading to rigidity and resistance to change. Yet the theories of these three schools provided a way to efficiently organize and manage the large organizations that were developing at the same time that they were being formulated. There is little doubt that many organizations, including libraries and other information agencies, still depend heavily on these classic theories.



### What Would You Do?

The time is 1883, the place New York City. Melvil Dewey has just been appointed librarian at Columbia College. Although Columbia has a progressive president, it has a very conservative faculty who view new ideas as a threat to what they teach and a Board

of Trustees that also prefers the status quo. Dewey has ambitious plans for the library and recommends that Columbia consolidate its collections into a single library, create a shelf list, construct a complete catalog in one alphabet, and build a subject catalog. Dewey wants to increase the hours the library is open from 15 per week to 14 per day.

"It will," Dewey states, "require more employees to carry out these reforms." He estimates that the consolidation will eliminate two positions but that the recataloging and extended hours will require about eleven additional workers. Except for one employee whom he inherited from his predecessor, Dewey has been able to choose all of the new personnel. He has hired seven women on a campus described as "almost as hermetically sealed to women as a monastery." As Dewey explains, hiring college-educated women allows him to recruit a talented workforce for low cost. These new workers come with good character, and because they are college graduates, they arrive with knowledge of books and reading. In addition, because there are few other professional opportunities for women available, they will work for less money.

Dewey is not interested in just the large issues but is equally attentive to the small. He is concerned about noise and has had rubber tips placed on all chairs and table legs and rubber wheels put on book trucks and has ordered all the pages to wear slippers. New readers have been handed cards requesting them to step lightly and not to talk, even in low tones. They also have been told that they may not use tobacco, wear hats, or put their feet on the chairs or tables. Mr. Dewey came in yesterday with new cards that he just had printed. He plans to hand one to anyone he sees littering. The cards read: "I picked these pieces in the hall and infer that you threw them on the floor. My time and that of my assistants is too valuable for this work. Still we prefer to do it rather than have the building disfigured." Principle above diplomacy is always his approach.

Dewey has begun the library consolidation with a move into a new library building containing 50,000 volumes previously located in nine different locations. He is beginning the reclassification and recataloging of the collections. Dewey is considering innovative ways to increase the size of the book collection. Dewey is also engaged in a number of so-called larger interests. He is considering beginning a new reference service for students. He has established a new series of bibliographic lectures. He recently invited 72 New York City librarians to a meeting at Columbia where they voted to form a New York Library Club whose "object will be by consultation and cooperation to increase the usefulness and promote the interests of the libraries of New York." Dewey also has been talking about starting a new school for library education at Columbia and is planning to advertise for female students, even though Columbia admits only men as students.

Because Dewey has pressed so hard and so relentlessly for his interests, it was only a matter of time before dissatisfaction with his administration began to appear. The costs of his reforms and his larger interests have been criticized by a number of faculty and alumni. In an attempt to reduce costs, he recently decided to fire the only employee he had inherited, a move that badly backfired when the faculty demanded that he reinstate "their librarian." Dewey is now scheduled to appear before the Columbia College trustees to defend his administration to a group who think that his larger interests do not fit the narrower needs of the college and that he is making too many changes too quickly.

What are the major issues that have led to the conflict between Melvil Dewey and the Board of Trustees? Imagine you are a member of the Board of Trustees. What will you plan to say to Mr. Dewey? Now switch roles and imagine that you are Melvil Dewey. How would you justify your actions to the board?

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The information for this case was taken from Wayne A. Wiegand, *Irrepressible Reformer: A Biography of Melvil Dewey* (Chicago: American Library Association, 1996), chap. 4.

## THE HUMANISTIC APPROACH

During the 1930s, management studies began to give more attention to the concerns of individuals working in organizations. No longer were workers considered cogs in the machinery of industry. The main emphasis of observation and study became the individual and the informal group in the formal organization; the primary concern was with integrating people into the work environment. This movement had two major schools: the human relations and the self-actualization schools.

### Human Relations Movement

This movement focused on the behavior of the individual and his or her quality of life in the organization, as well as on the needs, aspirations, and motivations of this individual and on those of the group and the organization. The major assumption was that if management can make employees happy, maximum performance will be the result. One of the early writers in this movement was Chester Barnard (1886–1961), who dwelled on the contribution-satisfaction equilibrium as he examined the organization as a social system. He was the first to introduce the issue of the social responsibility of management, including fair wages, security, and the creation of an atmosphere conducive to work.<sup>9</sup> Mary Parker Follett (1868–1933) was also an early pioneer who recognized the interdependencies between the individual, the work, and the environment. She emphasized worker participation and the importance of shared goals. Follett also advocated so-called constructive conflict; she saw conflict within an organization as inevitable and wanted to provide ways to make

### **30 Introduction**

that conflict work for the organization. Although her contributions to management theory were initially overlooked by management scholars, they are now being rediscovered and reapplied in modern organizations.<sup>10</sup>

The proponents of this school drew many of their ideas from research conducted by Elton Mayo (1880–1949) and a group of industrial psychologists at the Western Electric Hawthorne Plant in Chicago, Illinois. The Hawthorne studies in the late 1920s were among the first studies that demonstrated the importance of the human side of organizations.<sup>11</sup> Interestingly, the studies were begun as a result of scientific management and were designed to attempt to find a way of increasing efficiency and effectiveness by varying the level of illumination for workers in the organization.

As efficiency engineers at the Hawthorne plant were experimenting with various forms of illumination, they noted an unexpected reaction from employees. When illumination was increased, so was productivity. What was really surprising, however, was that when illumination was decreased, production continued to increase. This same increase in production also occurred when the illumination was not changed at all. Mayo was asked to examine this paradox. He found that the explanation to the increased production lay not in the changes in the working conditions, but in the changes in the way the workers felt about themselves. By lavishing attention on the workers, the experimenters had made them feel as though they were an important part of the company. These previously indifferent employees had coalesced into congenial, cohesive groups with a great deal of group pride. Their needs for affiliation, competency, and achievement had been fulfilled, and their productivity had thus increased. The Hawthorne studies are important because they demonstrated that:

1. Workers are more motivated by social rewards and sanctions than by economic incentives.
2. Workers' actions are influenced by the group.
3. Whenever formal organizations exist, both formal and informal norms exist.

In short, the Hawthorne studies are a landmark in management research because they were the first studies to recognize that organizations are social systems and that the productivity of workers is a result not of just physical factors but of interpersonal ones as well.

Mayo's conclusions were different from those of Taylor who thought that workers were motivated only by money. Mayo maintained that workers are primarily motivated by togetherness and crave individual recognition within the group. In general, the human behavior movement maintained that if the organization makes employees happy, it will gain their full cooperation and effort and therefore reach optimum efficiency.

### **Self-Actualizing Movement**

The self-actualization movement was closely related to the human relations movement and is often confused or intertwined with it. It differed from the human relations school, however, in that its emphasis was not primarily on

managers recognizing the importance of workers and trying to make them happy; instead it emphasized designing jobs that would allow workers to satisfy higher-level needs and utilize more of their potential. Abraham Maslow was one of the early proponents of this school. Maslow’s needs theory is built upon the concept that humans have a hierarchy of needs, starting with the basic physical necessities of food, shelter, and clothing and ascending five steps to the intangible needs of self-actualization and fulfillment, with the emphasis on self-actualization.<sup>12</sup> Maslow’s theory will be described in greater depth in chapter 13.

Douglas McGregor (1906–1964) was another powerful influence from this school. In the 1950s, McGregor put forth two influential set of assumptions about workers; he called these sets of assumptions Theory X and Theory Y.<sup>13</sup> These assumptions can be seen in table 2.2. The first set of assumptions, Theory X, reflects what McGregor saw as the traditional, autocratic, managerial perception of workers. McGregor questioned whether a Theory X perception of workers was adequate in a democratic society in which the workforce enjoys a rising standard of living and has an increasing level of education. He argued that the intellectual potential of the average human being was only partly utilized in most workplaces. He then put forth an alternative set of generalizations about human nature and the management of human resources, which he called Theory Y.

Theory Y presents a much more positive picture of people, but the assumptions that constitute this theory are more challenging to managers. These assumptions imply that human nature is dynamic, not static. They indicate that human beings have the capacity to grow and develop. Most important, Theory Y makes managers responsible for creating an environment that promotes positive development of individual employees. Theory Y managers do not try to impose external control and direction over employees; instead managers allow them self-direction and control. McGregor’s assumptions made many managers aware that they had overlooked the potential of individual workers.

**TABLE 2.2** The Assumptions of McGregor’s Theory X and Theory Y

<b>Assumptions of Theory X</b>	<b>Assumptions of Theory Y</b>
Average human beings have an inherent dislike of work and will avoid it if they can.	The expenditure of physical and mental effort in work is as natural as play or rest.
People must be coerced, controlled, directed, and threatened with punishment to get them to work	Individuals will exercise self-direction and self-control in the service of objectives to which they are committed.
People prefer to be directed, wish to avoid responsibility, have relatively little ambition, and, above all, want security.	People learn, under proper conditions, not only to accept but also to seek responsibility.
People are self-centered and do not like change.	Imagination, ingenuity, and creativity are widely distributed among workers.

Source: Douglas McGregor, *The Human Side of Enterprise* (New York: McGraw-Hill, 1960).



## What Do You Think?

John Doe, the supervisor of the mail room in a very large library, is a micromanager. He stands over the shoulders of workers while they are performing tasks and makes “helpful” comments. He insists on checking and double-checking every piece of work that is produced by his employees. He arranges all of the schedules and makes all of the decisions. Workers are required to sign in and sign out of the workplace and are allowed no flexibility in scheduling. McGregor has given us a theory to explain this manager. Using McGregor’s theories, how would you classify John Doe, and what characteristics cause you to place him in that category?

Peter Drucker (1919–2005), who in the 1950s introduced management by objectives, an approach that advocates substituting a more participative approach for that of authoritarianism, was another proponent of this school. So was Chris Argyris, who suggested that organizational structure can curtail self-fulfillment.<sup>14</sup> Other disciples of this approach include Rensis Likert, Warren G. Bennis, and Robert Blake and Jane Mouton. More about these theorists can be found in later chapters in this book.

The writers of the humanistic school challenged the view of employees as so-called tools, a view that had been the basis of much of the classical perspective. They forced managers to think about the interpersonal processes in organizations and to consider workers as valuable resources. Although some of these writers have been accused of being overly simplistic about the nature of workers and the complexity of individuals in the workforce, the ideas that they advanced about workers and their talents and needs are still very influential.

## THE QUANTITATIVE APPROACH

After World War II, there was a movement in the United States and a number of other countries to develop better and more sophisticated tools to use in management. Scientists, mathematicians, and statisticians had been used extensively in the war effort to solve problems and to improve the efforts of the countries involved. When the fighting was finished, there was a move to use these same techniques in civilian life. This gave rise to a movement that is referred to as the quantitative (or the management science) approach to management. Thinkers in this school wanted to improve managerial decision making by using sophisticated mathematical and statistical methods. Mathematics, statistics, and economics were used to contribute to management through the use of mathematical models for decision making and prediction. In many ways, the quantitative perspective is similar to the earlier scientific management approach. As Herbert Simon points out, “no meaningful line can be drawn anymore to demarcate operations research from scientific management or scientific management from management science.”<sup>15</sup>

Subfields within this perspective include areas such as management science, decision theory, and operations research. Management scientists share common characteristics, namely the application of scientific analysis to managerial problems, the goal of improving the manager's decision-making ability, high regard for economic effectiveness criteria, reliance on mathematical models, and the use of computers.<sup>16</sup> The decision theory movement uses techniques such as game theory, simulation, and linear programming in presenting alternatives for decision makers to consider. The decision theory movement is primarily concerned with the study of rational decision-making procedures and the way managers actually reach decisions. The implication is that mathematical models and quantitative processes can serve as the basis for all management decisions. Many of the researchers in this movement have concentrated on describing the decision-making process, drawing on psychology and economics,<sup>17</sup> or on prescribing how decisions should be made.<sup>18</sup> The mathematical branch of the decision theory movement is concerned with both what to measure and why, the goal being to indicate how best to improve a system or solve a problem. Operations research is an applied form of management science that helps organizations develop techniques to produce their products and services more efficiently. Operations research uses techniques such as cost-benefit analyses, linear programming, systems analysis, simulation, Monte Carlo techniques, and game theory.

Managing information for timely decision making has become a major focus of some research efforts. Management information systems (MIS) developed as a sophisticated technique for systematically gathering relevant information for decision makers. Recent advances in technology have greatly aided researchers in the development of MIS and have allowed them to test theories more quickly using simulation models. Researchers in the quantitative school have advanced managers' awareness of how models and quantitative techniques can be used in the planning, controlling, and decision-making processes of managing.

## **THE SYSTEMS APPROACH**

One of the most widely accepted theoretical bases for modern management is called the systems approach. This movement integrates knowledge gleaned from the biological, physical, and behavioral sciences. Organizations are regarded as systems that function as a whole. Ludwig von Bertalanffy (1901–1972) was one of the first people to write about the “system theory of the organism.”<sup>19</sup> He defined a system as “a set of elements standing in interrelation among themselves and with the environment. The really important aspect is the interaction among the elements to create a whole, dynamic system. This system, if it is an open one, interacts with its environment.”<sup>20</sup> The system is influenced by the environment and in turn influences the environment. If the system is dissected, it becomes evident that it comprises a number of subsystems; likewise, the organization is but one subsystem of a larger environment. The older schools of management envisioned organizations as closed systems, ones in which the outside environment did not interact with the system. The systems approach to management differs from these older

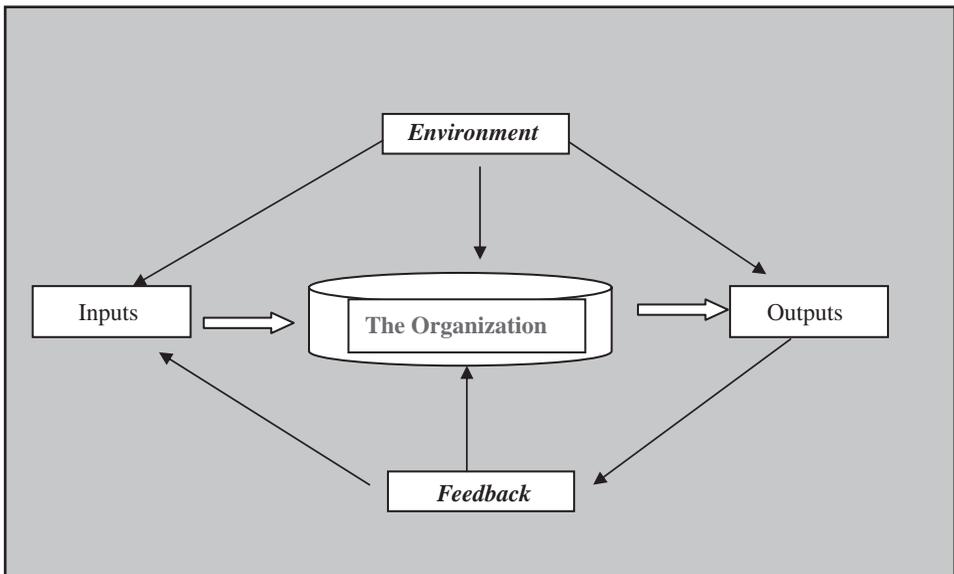
## 34 Introduction

classical perspectives because it acknowledges the impact of the outside environment on everything that happens within an organization. System theory envisions organizations as porous entities that are greatly affected by the outside environment.

Writers in this school view organizations as a part of a larger system. Each organization has inputs that enter the organization, that are then processed in some way, and that finally emerge from the system as outputs. The environment influences all of the elements of the system and provides feedback that allows the organization to assess whether its outputs are successful or not. The elements of the system theory can be seen in figure 2.3.

The inputs and the outputs vary according to the type of organization. In a library, the inputs could be considered to be things such as funding coming to the library from the city to support services, unprocessed books and journals being received, users looking for information and reading material, or children coming for a story hour. All of these inputs are received from the outside environment and taken into the library, where they are processed or transformed in some way. Then the library produces outputs. These can be elements as diverse as books going home with patrons, adults who have had their information needs satisfied at the reference desk, or children who go home talking about the story they heard at the library that morning. Systems theory also has given managers the concept of synergy; that is, the concept that the whole is greater than the sum of its parts. When an organization is working well, each subunit can accomplish more than it could if it were working alone. Systems theory has moved organizations away from thinking about themselves in isolation. Using this approach, managers are reminded of the importance of the environment on any organization and of the interdependence of the subsystems and the larger system.

**Figure 2.3—The Systems Approach to Management**





## Try This!

Think about an organization you know well, either a library or another type of organization, and view it from the systems perspective. What are the inputs and the outputs of the system? What is done in the system to transform the inputs into outputs? How does the environment influence the system, and how is feedback received? Do you think that the organization is synergistic?

## THE CONTINGENCY APPROACH

Beginning in the 1970s, the contingency approach became one of the most influential ways of thinking about management. Frederick W. Taylor was trying to find the “best way” to manage; contingency theory says that there is no one best way. This concept takes the situational approach. It considers the circumstances of each situation and then decides which response has the greatest chance of success.<sup>21</sup> The contingency or situational approach asserts that:

- There is no best management technique.
- There is no best way to manage.
- No technique or managerial principle is effective all of the time.
- Should the question be posed as to what works best, the simple response is, “It all depends on the situation.”<sup>22</sup>

Technological impact, size, and outside influences, among other factors, play a role in determining the structure of the organization. The challenges of the contingency approach are in perceiving organizational situations as they actually exist, choosing the management tactic best suited to those situations, and competently implementing those tactics.<sup>23</sup> It argues that universal principles cannot be applied in organizations because each one is unique. Contingency theory tells managers that there is no so-called silver bullet—no one-size-fits-all approach. Instead, a manager has to look at the organization, its goals and objectives, the technology it uses, the people who work there, the outside environment, and a number of other factors before deciding how to manage.

## THE LEARNING ORGANIZATION

In the 1990s, another influential approach to management became popular. The learning organization approach was first put forth by Peter Senge as a way to help organizations meet the challenges of a rapidly changing environment.<sup>24</sup> As its name implies, a learning organization is one in which all employees are constantly learning. People at all levels of the organization are focusing on identifying and solving the problems confronting it. The learning

## 36 Introduction

organization maintains open communications, decentralized decision making, and a flattened organization. It is an organization that can overcome limitations, understand the pressures against it, and seize opportunities when they present themselves. The basic principles of this approach are made up of five core areas:

1. **Personal mastery**, with people identifying what is important in the process.
2. **Mental models**, with the organization continuously challenging members in order to improve their mental models.
3. **Shared vision**, requiring an imagining of what the organization should be.
4. **Team learning**, through cooperation, communication, and compatibility.
5. **Systems thinking**, recognizing the organization as a whole.

Leaders assume various roles—innovator, broker, director, producer, coordinator, monitor, facilitator,<sup>25</sup> teacher, steward, or designer of learning processes—serving the staff rather than controlling it.<sup>26</sup> The learning organization approach seems to be a good fit as more organizations are making “the shift from the command-and-control organization, the organization of departments and divisions, to the information-based organization, the organization of knowledge specialists.”<sup>27</sup>

## SUMMARY

This general overview does not permit detailed discussions of these concepts or theories. Instead, these brief discussions are intended to provide the basic background necessary for a student or other interested professional to place into perspective the observed theories as they apply to today’s libraries and information centers. Applications of many of the theories mentioned are discussed in later chapters of this book.

Perhaps the best way of viewing the maze that is management theory is to consider each movement as a subsystem that contributes to the overall system of people working together in organizations that are changing. Each theory brings new means of examining these organizations. The current political, economic, social, and technological climate is forcing a reevaluation of systems and structures and a reexamination of some of the early management theories. Modern managers are still using some parts of all of the theoretical frameworks discussed. Modern management often needs to use a pastiche of approaches to fashion the best way to manage in any one particular organization.

## LIBRARY AND INFORMATION CENTER MANAGEMENT: THE HISTORICAL PERSPECTIVE

The rest of this chapter will look at how libraries and information centers have used these general management approaches. From its beginning, library

management, as might be expected, showed no identifiable characteristics that set it apart from other types of organizational management. Trends, theories, and techniques discussed in management literature easily found their way into library practice, and, over the years, they have been adapted with varying degrees of success. Libraries often adopted the managerial approaches later than they were adopted in the for-profit world, but almost every managerial approach introduced into the corporate sector was eventually tried in libraries. The integration of those theories and techniques into library operations has been extensively reported in library literature for well over a hundred years.

In 1887, F. M. Cruden, then librarian of the St. Louis Public Library, stated that "the duties of a chief executive of a library differ in no essential way from those of a manager of a stock company.... The librarian may profit by the methods of the businessman."<sup>28</sup> Arthur E. Bostwick, addressing the New Zealand Library Association in 1891, advocated the adoption of the methods of business efficiency in the operation of libraries.<sup>29</sup> Other early library leaders, including Charles C. Williamson, emphasized the value to libraries of industrial methods, pointing out that "no one has attempted yet to treat comprehensively the principles and philosophy of library service or library management."<sup>30</sup> This was stated at the time of the development of the scientific management school, whose theories already had been applied to a number of industrial situations but not yet to libraries. It was not until the 1930s that particular attention was paid to the application of scientific management to libraries. Donald Coney emphasized this "new" approach by stating that "scientific management furnishes library administrators with a useful instrument for orientating their activities."<sup>31</sup> Ralph R. Shaw began his landmark studies of the scientific management of library operations in the late 1940s and early 1950s.<sup>32</sup>

The influence of the human relations school on library and information services also became particularly evident in the early 1930s; issues relating to people working in libraries began to receive attention, and preparation for library administrators emphasized the personnel relations approach. An article by J. Periam Danton emphasized the trend toward analyzing the human side of management, in which personnel administration became paramount to the democratization of the library organization.<sup>33</sup> This was further expounded in Clara W. Herbert's 1939 volume on personnel administration.<sup>34</sup> Among Herbert's recommendations were greater attention to personnel administration, greater consideration of basic organization directed toward the simplification and coordination of activities, greater staff development, and better working conditions.<sup>35</sup>

It is also important to look at the quantitative, or mathematical, school and the influence it has had on library operations. From the late 1960s onward, managers of libraries have used applied operations research in decision making.<sup>36</sup> In the 1960s, an innovative group of researchers, led by Philip Morse at MIT, and a later group, headed by Ferdinand Leimkuhler at Purdue, studied library problems using operations research. Two reports from other sources illustrate this trend. In 1972, the Wharton School at the University of Pennsylvania finished a study that had been supported by a federal grant to design and develop a model for management of information systems in universities and large public libraries.<sup>37</sup>



## What Do You Think?

Many libraries are trying to make the transition to becoming learning organizations. One of these is the library at the University of Nebraska at Lincoln. Two librarians from there recently wrote:

To advance, libraries need to move away from being knowing organizations that emphasize one best way to do things by following rules and regulations. They need to move past being understanding organizations where organizational culture and values dominate decision making so that change is unlikely to occur. They need to advance past thinking organizations that emphasize fixing and solving problems without questioning why the system broke. Instead, they must become organizations that create a climate that fosters learning, experimenting, and risk taking.

Why is it often hard to make the transition to a learning organization? What would you think would be the first steps in making such a transition? Should it be easier to make the transition in a library than in many other types of organizations?

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Joan Giesecke and Beth McNeil, "Transitioning to the Learning Organization," *Library Trends* 52, no. 1 (Summer 2004): 54.

As management theory continued to evolve, libraries continued to take the precepts and principles being developed and apply them to libraries. Just as they had with the scientific and the humanistic schools of management, libraries also adopted the concepts of the systems, the contingency management, and the learning theory perspectives. Libraries now are seen as open systems that are influenced by, and that need to be responsive to, the larger environment. The library management literature over the past few decades shows that contingency management also has been widely accepted, and library managers are trying to find the specific management approach that will best suit the needs of their own unique setting. It is not surprising that so many libraries have enthusiastically adopted the precepts of the learning organization theory. Many articles have been published recently that have described libraries of various types adopting Senge's concept of the learning organization.<sup>38</sup>

How the systems, the contingency and the learning organization approach are applied in libraries will be discussed in greater depth later in this book, because these approaches are the foundation of much that is going on in contemporary library management.

## CONCLUSION

It is evident that the various management theories developed in the past 150 years—scientific management, human relations, quantitative, open

system, contingency, and learning environment—are being applied to library and information center operations today. The continued use, development, and refinement of those thoughts and techniques will result in more efficient and effective library and information service. The remaining chapters of this textbook discuss factors necessary to consider as change is instituted in knowledge-based library and information services organizations.

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