

The foundations of Henri Fayol's administrative theory

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Keywords

Management theory, History

Abstract

Among modern scholars and students there is an increasing distance between the fundamental thoughts of early management writers and contemporary, often secondary, accounts of how these pioneers developed their ideas. This shortcoming can be remedied by seeking original sources from when a pioneer's ideas were being formulated and from the context within which this occurred. We examine examples of how others have furthered our understanding of management history by the discovery and translation of pioneering writings and present a rare, out-of-print translation and a previously untranslated and unpublished presentation from the French pioneer, Henri Fayol. These presentations to his colleagues in the mineral industry reveal Fayol's early reflections as they would later evolve into his classical book, *Administration Industrielle et Générale*.

As management historians, we are seldom able to trace the formative thinking of our field's major contributors, especially its founders. McMahon and Carr (1999, p. 228) noted the "increasing distance between students and scholars of today and the early writers in the development of management thought . . . The current generation of students are reading less of the actual writings of the early scholars and more what those writing current texts are attributing to [them]." At best, by examining contemporary accounts, or in the limited instances where autobiographies exist, we can attempt to discern the incipient antecedents and inchoate reasoning giving rise to the later development of more polished thoughts (Bedeian, 1992; Carson and Carson, 1998). In this way, we may strive to gain a more complete understanding of our own intellectual heritage as it has been shaped by the experiences, reflections, and study of those who have gone before us, as well as continue to learn from the past as it informs the present (Bedeian, 1998).

There are precedents that indicate how the discovery, translation, and/or reprinting of early writings have informed the present. We would still be in the dark about what really happened at the Hawthorne Plant of Western Electric without the seminal works of Wrege (1961) and Greenwood *et al.* (1983). Max Weber's (1922) turgid *Wirtschaft und Gesellschaft* was published posthumously and did not reach an English-reading audience until Gerth and Wright Mills' translation of Weber's theory of bureaucracy (Weber, 1946) and later, Henderson and Parsons' rendering of his theory of economics and society (Weber, 1947).

Eberly and Smith's (1970) discovery of a heretofore unpublished speech by Mary Parker Follett enabled us to appreciate her concern with educational as well as business

and public administration (Follett, 1970). Wrege's (1995) publication of a stenographer's notes of one of Frederick W. Taylor's "Boxly talks" provided material that Taylor presented to his audiences, as well as an early mention of Henry Noll, who became the famous "Schmidt" of the pig-iron handling studies. A 1998 reprint in the *International Journal of Public Administration of Papers on the Science of Administration*, edited by Gulick and Urwick (1937), enabled scholars to have access to a long out-of-print collection of papers by Luther Gulick, Lyndall Urwick, James D. Mooney, Henri Fayol, Henry S. Dennison, L. J. Henderson, T. N. Whitehead, Elton Mayo, Mary P. Follett, John Lee, and V. A. Graicunas. In each of these instances, modern readers can be informed about the past through the availability of foundational documents.

In the case of Henri Fayol, English-reading audiences did not have wide access to his ideas until over three decades after the initial publication of his major work "Administration industrielle et générale" (Fayol, 1916). Charles de Freminville (1927) provided a synopsis of Fayol's administrative theory and comparison of Taylor and Fayol's thinking for a Taylor Society audience, but it apparently had little contemporary impact. The first translation of Fayol's *Administration Industrielle et Générale (AIG)* was by John Adair Coubrough "of the British Xylonite Co. Ltd . . . The book was printed in International standard format by the International Management Institute at Geneva. A few hundred copies were made available to Sir Isaac Pitman & Sons, Ltd., for distribution in Great Britain. No English translation was published in the United States of America despite widespread interest in the management in that country" (Urwick, 1949, p. v). Dunod and Pinat published an estimated 15,000 copies of Fayol's *AIG* in French (Arnold, 1964) but one reviewer noted that Coubrough's translation was "not available in most libraries in the



Management Decision
40/9 [2002] 906-918

© MCB UP Limited
[ISSN 0025-1747]
[DOI 10.1108/00251740210441109]

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United States, not even in the Library of Congress" (Pearson, 1945, p. 80).

Sarah Greer, a bilingual assistant to Luther Gulick, found and translated a 1923 speech by Fayol on "The Administrative Theory in the State" for Gulick and Urwick's (1937) *Papers on the Science of Administration* (Fayol, 1937, pp. 3-45/1998, pp. 545-60). Gulick acknowledged that he adapted the acronym POSDCORB from Fayol to describe executive work (Gulick, 1937, p. 13/1998, p. 457). Based on Fayol's influence, Gulick's work would have a lasting impact on public administration. Urwick (1937) used Fayol's writing to promote a functional approach to management in developing his theory of administration and organization. It was not until the Storr's translation that Fayol's (1949) *AIG* reached a wider audience, especially in the USA and established Fayol as a major authority on management.

Overlooked due to a lack of translations and publication, however, are the stepping-stones that led Fayol to the major statement of his ideas. A comprehensive bibliographic study (Breeze and Bedeian, 1988) disclosed numerous presentations, articles, and books by Fayol, many of which have never been translated into English. Breeze (1995) classified Fayol's writings in three stages:

- 1 on technical subjects concerning coal mining;
- 2 the publication of "Administration industrielle et générale" in a trade journal (Fayol, 1916);
- 3 its subsequent publication as a book in France (Fayol, 1917); and finally the later English translations.

Missing are the two building blocks that preceded *AIG*. The first of these was a presentation Fayol made before his colleagues in the French mineral industry in 1900 (see Fayol, 1901) and was translated by Coubrough in 1930 as an appendix to *AIG* (Fayol, 1930). This 1930 edition is long out of print and has passed into the public domain (Vitry, 2000). A 1908 presentation, again before an audience of his colleagues in the French mineral industry, has never before been translated and published. A copy was provided by Henri Fayol's son to Arthur G. Bedeian (Fayol, fils, 1975).

Our goal is to provide translations of these building blocks with a brief commentary to illustrate how they illuminate Fayol's thinking prior to the book (i.e. *AIG*) that established him as a major management theorist. Biographical information on Henri Fayol is readily available elsewhere (Breeze, 1985; Sasaki, 1995; Wren, 2001) so our

focus will be on these expressions of Fayol's early thinking.

Having written and published a number of significant papers in the fields of mining, metallurgy and geology, Fayol first spoke publicly on the subject of administration and management at the closing session of the International Mining and Metallurgical Congress in Paris, 23 June 1900. Although his remarks at the time give only a limited indication of his later direction of thought, they are interesting because they already indicate his awareness of the importance of the administrative dilemma. On 23 June 1900, Henri Fayol addressed his colleagues in the mineral industry (Fayol, 1930, pp. 79-81):

The President. Gentlemen, we have now finished the separate meetings of the mining and metallurgical sections, and, as you know, they have been most fruitful and interesting. At the present moment, all the members of the Congress are assembled here, as they were on the opening day, and we thought that it was a good idea to introduce a subject, which is of equal interest to all of us. The subject was proposed by M. Henri Fayol, whom I have much pleasure in asking to address you.

M. Henri Fayol. Gentlemen, when toasts were being drunk yesterday, we had the pleasure of hearing men who were truly representative of science and of professional experience, speak of the remarkable progress of our two great industries and of the happy influence which the friendly relations existing between engineers all over the world have had on this progress. M. Harzé described these relations by saying that they established a sort of technical freemasonry between us.

I emphasize the word technical, Gentlemen, because it is a fact that the papers read at this Congress have been almost exclusively technical in character; we have heard no echo of our commercial, financial and administrative duties. And yet, the Congress has numbered among its members men who are particularly distinguished in these matters. It is undoubtedly a matter for regret that no one has spoken, for example, about the commercial combinations which, under the names of agreements, agencies and trusts, have become of such importance in the industrial world during the last few years.

But I must turn now to the administrative problems to which I want to draw your attention, because it seems to me that the mutual education, which we practice with such useful results on the technical side of our work, can be of equal service on the administrative side.

The technical and commercial functions of a business are clearly defined, but the same cannot be said of the administrative function. Not many people are familiar with its constitution and powers; our senses cannot follow its workings – we do not see it build or

forge, sell or buy – and yet we all know that, if it does not work properly, the undertaking is in danger of failure.

The administrative function has many duties. It has to foresee and make preparations to meet the financial, commercial, and technical conditions under which the concern must be started and run. It deals with the organization, selection, and management of the staff. It is the means by which the various parts of the undertaking communicate with the outside world, etc. Although this list is incomplete, it gives us an idea of the importance of the administrative function. The sole fact that it is in charge of the staff makes it in most cases the predominant function, for we all know that, even if a firm has perfect machinery and manufacturing processes, it is doomed to failure if it is run by an inefficient staff. In order to show you the way in which the administrative function works in an industrial concern, I shall take a simile from physiology. It is like a man's nervous system, which is not visible to a superficial observer. None of our senses can follow its action, and yet, although the muscles possess energy of their own, they cease to contract if the nervous system stops working. Without it, the human body would become an inert mass, and every organ would rapidly decay. It is present and active in every organ and in every part of each organ; it receives impressions by means of cells and fibers and transmits them first to lower nerve centers, or reflex centers, and from there, if necessary, to the brain. The order is then sent out from these centers or from the brain and, moving in the opposite direction, reaches the muscle, which is to perform the movement.

An industrial concern also has its reflex actions, or ganglionaries [*sic*], which are effected without the direct intervention of the higher authority. In general, however, the information, which comes from an employee in contact with the outside world or with another employee, goes to the management, which examines it, makes a decision, and gives an order, which travels in the opposite direction until it reaches the employees who are to carry it out. This, then, is the way in which the administrative function works, and all employees take some part in its operation.

Out of 100 hours spent by a workman in a big industrial undertaking, only a few are taken up by administrative questions – such things as sundry information passed on to the foreman, discussions about wages or the hours and arrangement of work, time given to meetings, of sick funds, societies, etc. The foreman receives and transmits the results of the workman's observations, receives, transmits, and sees to the carrying out of orders, makes observations himself and gives advice, and clearly gives more time to administration. The time taken up by administrative questions increases with the employee's level in the industrial hierarchy,

and even the ordinary engineer is closely concerned with the problems of order, foresight, discipline, organization, and the selection and training of workmen and foremen. The manager has to consider, in addition to these, commercial and financial problems, State regulations, etc.. . the result is that the time given to technical questions is progressively reduced, and becomes almost negligible when we reach the level of the head of a really big concern. I shall not go into similar details about employees engaged in the commercial, financial, and other functions, because, apart from their special work, they all play the same part in the administrative function as the corresponding technical employees.

Every employee in an undertaking, then, takes a larger or smaller share in the work of administration, and has, therefore, to use and display his administrative faculties. This is why we often see men, who are specially gifted, gradually rise from the lowest to the highest level of the industrial hierarchy, although they have only had an elementary education. But young men, who begin practical work as engineers soon after leaving industrial schools, are in a particularly good position both for learning administration and for showing their ability in this direction, for in administration, as in all other branches of industrial activity, a man's work is judged by its results.

There are, then, an enormous number of employees in mines, factories, and every other kind of undertaking, who are more or less concerned with administration, and it is from them, and especially from the engineers, that I want to get communications like those, which we exchange, on technical subjects. The proper utilization of the physical, moral, and intellectual gifts of men is just as essential for the good of mankind as the proper utilization of our mineral wealth. While we are trying to master matter, as our distinguished President put it, we must try to master ourselves, to discover and apply the laws which will make the organization and running of administrative machinery as perfect as possible. Why should we not share our observations, experiences, and thoughts for the common good? There are international commissions, which do very useful work on research into methods of testing structural materials; surely research into improved methods of training and testing industrial employees deserves quite as much attention and care.

A communication can be valuable without covering the whole of a large subject in a masterly manner; only very few people can do work of that kind in the administrative or the technical sphere, but the smallest communications are not necessarily the least interesting. We shall have plenty to tell one another about the best way of getting good workmen, foremen, engineers, and higher employees, and about the administrative

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Management Decision
40/9 [2002] 906-918

equipment adopted, and the various ways of making it work. This is the program that I should like to present to M. Harzé's freemasonry, asking it to deal with administrative as well as technical subjects. I will undertake to contribute my share.

In the meantime, let me draw your attention to a problem of selection, which is of supreme importance to our two great industries. We are all agreed as to the need for combining theory and practice in the education of engineers, but people differ as to the proportions in which they should be combined. Some people are always thinking of stiffening up the entrance syllabuses and the courses in the big industrial schools, while others think that we have already exceeded the amount of theoretical training which is necessary, and that we are making the pick of our young men waste one or two years which would be better spent in practical work. I myself take the latter view.

We certainly do not want to reduce, in any way, the keenness and energy applied to scientific research. On the contrary, I consider that the State is not liberal enough to workers in this field, and that industry would acquire both honour and profit by providing the funds required for the improvement of laboratories and for relieving research workers from the material cares of existence. I hope that in France a move will soon be made in this direction.

But it is a very far cry from this point to the state of wishing that every one of our engineers should be a scientist, and, judging by the way in which school syllabuses are constantly being enlarged, it would appear that this is the end in view. Would you like to know, for instance, to what extent higher mathematics is used in our two great industries? Well, it is never used at all. Having found this to be the case in my own experience, after quite a long career, I wondered whether I was not an exception; so I made enquiries, and I found that it was a general rule that neither engineers nor managers used higher mathematics in carrying out their duties. We must, of course, learn mathematics that goes without saying but the question is how much must we learn? Up to the present this point has nearly always been decided simply by professors, but it seems to me to be a question in which professors do not count very much, and in which they count less as they become more learned and more devoted to their work. They would like to pass on all their scientific knowledge and they find that their pupils always leave them too soon. This has been the cause of a great deal of wasted time and effort, and industry, which needs young men who are healthy, tractable, unpretentious and, I would even say, full of illusions, often receives engineers who are tired out, weak in body, and less ready than one could wish to take modest jobs and work so hard that everything seems easy to them. I am

convinced that they could begin practical work much earlier and just as well prepared, by leaving things which are not used in practice out of their school education.

Administration, which calls for the application of wide knowledge and many personal qualities, is above all the art of handling men, and in this art, as in many others, it is practice that makes perfect. This is one of the reasons why we should release our future engineers for practical work as early as possible; there are many drawbacks to staying too long at school.

In my opinion, it is the industry concerned which should have the chief say in the question of the amount of theoretical training required. It is the industry which uses the products of the schools, and, like every consumer, it has the right to make its wishes known; it would be easy for it to do so in France through the two organizations which represent it, the Comité des Forges and the Comité des Houillères.

Allow me, Gentlemen, in closing my remarks, to remind you of the object of this paper, namely, that engineers should, in future, extend to the sphere of administration the mutual education that they have practiced so successfully in the technical sphere.

When Fayol made this presentation he had completed 12 years as the Managing Director (Chief Executive Officer) of Commentry-Fourchambault et Décazeville (Comambault), a firm that had been restored to financial solvency after facing bankruptcy when Fayol took over. Comambault had some 10,000 employees and was one of France's largest firms in terms of financial capitalization. Fayol had joined the firm as a mining engineer and rose through the hierarchy to become the top executive officer. The 1900 presentation reveals the introspection on Fayol's part that it was not his engineering, but rather other skills that he had used in managing the firm during that time. His emphasis on the difference between technical and administrative skills underscores what will become the foundation of *AIG*, that doing work and managing others at work requires a re-tooling of a person's abilities. Yet administrative studies were not being taught for engineers, nor for others.

Fayol also observed that all employees have some administrative duties: the operative worker exercising a few, but as one moved up in the hierarchy the time spent on administrative matters increased continually. Further, the success of the enterprise depended upon the wise exercise of administrative abilities. Fayol did not develop any principles of management at this time but noted that everyone was concerned with foresight, discipline, organization,

order, and the selection and training of employees. From his experience he also indicated that managers needed to know how to communicate with the "outside world," knowing about agreements, legal requirements, and other external factors affecting the firm. More importantly, Fayol asked his colleagues to collaborate in research and sharing of observations, experiences, and thoughts that would help all better understand this important matter of administration.

In a previously unpublished and untranslated presentation at St Etienne in 1908 he was ready to propose some general principles. The only known version of this presentation was retrieved by Henri Fayol junior from his father's archives. In a private letter, the son wrote:

In my father's archives I found the text of a speech that he gave at the St Etienne School of Mines on the occasion of the fiftieth Anniversary of the Socité Commentry-Fourchambault et Décazeville.

This is the document I sent to Mr. Blancpain, of which I have been able to obtain the copy that is appended [to this letter]. Contrary to Mr. Blancpain's opinion, I find the speech to be of great interest.

Based on his personal his experiences, [my father] shows how, with same equipment, the same mines, the same factories, the same financial resources, the same market and the same Board of Directors, even the same personnel, a company that was on the brink of failure in 1888 was consistently revived under his direction after that date and he concluded that the cause was a good administration ... as we would say today, a good management [system] (Fayol, fils, 1975).

This previously untranslated and unpublished 1908 presentation from Henri Fayol's personal papers indicates the progress he had made in developing his theory of administration (Fayol, 1908a):

The general principles of administration

Under this title, M. Fayol intends to provide the *Bulletin of the Society of the Mineral Industry* [see Fayol, 1908b] with a detailed history of the company Commentry-Fourchambault et Décazeville to which he has been attached for almost half a century. The succession of manufacturing procedures, of the methods of development, of the commercial policies, of the organization and of workers, the methods of administration in the various stages of development of the company during this period have been the subject of separate studies. From this complete work, M. Fayol has selected the Chapter devoted to administrative matters as the basis for his address.

The company Commentry-Fourchambault et Décazeville was born in the middle of the last century, in 1854. Founded by the amalgamation of two large organizations then in full operation – the Usines Metallurgiques de Fourchambault and the Commentry Collieries – it started in the form of a limited partnership of shareholders under the name of "Boigues Rambourg and Company," which it retained until 1874, the date of its transformation into a limited company.

To this nucleus have since been added several other establishments located in the same region and involved in the same industries, namely coal-mining and iron works;

- the metallurgical plant at Montluçon and the mine at Monvicq, which together with Commentry constituted the group L'Allier;
- the factories of Imphy and of Pique, the foundries at Torteron, Guerche, Feularde, together with the furnace and foundry at Fourchambault constituted the group Nievre;
- and finally an important mineral working for iron and flux in Berry assured the supplies for Hauts-Fourneaux. The amalgamation of these various establishments constituted a complete and effective industrial group.

For 30 years a continued prosperity, sometimes even spectacular, well justified the creation of this enterprise. Then the development of metallurgical institutions in the east and the north of France became more and more threatening to the prosperity and even to the existence of the factories in the center of the country: at the same time we can state that the amount of coal extracted each year at Commentry was far from paying its cost of extraction, and the closing of the mines was expected at any time. Finally the company's profits were reduced to the point where the payment of dividends ceased in 1885. In 1888 the company was almost resigned to closing and abandoning its factories and suspending operations in the mines when there was a change of management. Since then the Company has become profitable again and its recovery was as continuous and substantial as had been its decline.

The history of the Company will show that this decline and revival were due solely to the administrative procedures used. It was with the same mines, the same factories, the same employees that the Company went into decline before 1888 and with which it has recovered since that date.

Thus, certain administrative procedures were leading the Company into ruin while other procedures restored its prosperity. The work, the experience, the knowledge, and the goodwill of several thousand people could be made ineffective by imperfect administrative procedures while other administrative procedures could restore their value.

Such facts are not the least unusual; there are frequent examples everywhere; in industry, in commerce, in the family, in the state. They are reassuring for they allow us to hope that it is always possible to recover from a difficult situation.

We do not fully understand the effect of administrative procedures on business activities. In particular, our young engineers, who do not distrust the scientific and technical principles, which they have acquired laboriously over a long period, can be completely destroyed by few defective administrative procedures, and the success of an enterprise generally depends much more on the administrative ability of its leaders than on their technical ability. Nevertheless, it is certain that a leader who is a good administrator but technically mediocre is generally much more useful to the enterprise than if he were a brilliant technician but a mediocre administrator.

If we look more closely we see that success is always, or almost always, tied to the observance of a few principles. What are these principles? That is what I would like to clarify here.

But first we must come to terms with the meaning of the terms "administration," "administrative services" and "administrative capability."

According to the dictionary, "to administer" is to govern, or to manage a public or private business. It means, therefore, to seek to make the best possible use of the resources available in achieving the goal of the enterprise. "Administration" includes, therefore, all the operations of the enterprise. But as a result of the usual way of organizing things to facilitate the running of the business, a certain number of activities constitute the special departments; the technical department, the commercial department, the financial department, etc., and the scope of the administrative department is found to be reduced accordingly. So one could define the administrative department by saying that it includes everything that is not part of the other departments, but one can define it in a more positive manner by saying that it is specifically responsible for;

- 1 ensuring that unity of action, discipline, anticipation, activity, order, etc., exist in all parts of the enterprise;
- 2 recruiting, organizing and directing the workforce;
- 3 ensuring good relations between the various departments and with the outside world;
- 4 coordination of all efforts towards the overall goal;
- 5 satisfying shareholders and employees; labor and management.

We see that however it is limited, the task of the administrative department remains extensive and demanding.

There is no clear line of demarcation between the administrative department and the other departments: they surround each other, they intertwine, they interact with each other even while remaining distinct, just as, for example, the nervous system and the other functions of the human body. The administrative department, like the Technical Department, has subsidiaries in all areas and even in the most detailed ramifications of the social organization.

All the employees in an enterprise, I told the Congress of 1900, participate to a greater or lesser degree in the administrative function; as a result, all have occasion to exercise their administrative faculties and to be noticed for them. Thus, one finds sometimes that employees with a very low level of education, but who are particularly talented, can climb steadily from the lowest rung to the highest levels of the hierarchy in an Industrial or Trade Union organization.

We know how technical capability is obtained but it is difficult to say how administrative competence is obtained. In the absence of teaching and even of established principles, each has only his own experience and the lessons drawn from events, innumerable though they may be, at which has been present or has even taken part. But how does one construct a rule in the face of problems that are generally complex or in the midst of systems which are often contradictory, for everyone has his own which he naturally considers to be superior to that of his neighbor or predecessor? Left to his own devices, everyone does the best he can and always has to start from the beginning. It is not possible to make this task a bit less difficult for our successors? I think so.

Some maxims help to distract the search for a theory. It is easy to say, "The value of the work depends on the value of the man" whether an enterprise succeeds or fails. It explains everything; it avoids having to look for the true cause. Why does a man have a particular value? This question is seldom asked. It is certain that the destiny of an enterprise depends very much on the value of the person directs it. But what does this value consist of? In our big industrial colleges, they seem to believe that it depends uniquely on technical competence. However, there isn't much in common between Mathematics, or Chemistry, or Physics, or Mechanics or Geology and the task of an administration, which one could summarize as follows:

Anticipate, decide and act:

Understand the men and make use of them with tact (and know how to use them). One can be a great scholar, or one can have complete understanding of courses in mining

and metallurgy, and yet know nothing of these things.

In an industrial organization, the men who rise to the top are characterized much more by their administrative qualities than by their science or their technical knowledge. From his first steps in Industry, a young engineer himself is called upon to show his administrative ability much more than his technical ability. And without diminishing the importance of the technical ability, which is always, necessary in business and which is sometimes supreme, one can say that, in general, the value of a man depends most of all on his administrative ability. This is true not only for the Director but for all employees who participate in the administration of an enterprise, from the most powerful to the most modest. The influence each has on the result being naturally a function of his position, this being a sort of lever, which can multiply his personal influence by two, by ten, by 100 or even by 1,000.

Another maxim of which one must equally beware is the following: "One becomes an engineer but one is born an administrator." This is not true. In reality one becomes an administrator just as one becomes an engineer, an artist, or a scholar. One cannot succeed at all if one does not have the necessary aptitude, and if one has the aptitude, one is the stronger for a better understanding of the basic principles and the way to apply them. It is true that knowledge alone, even a deep knowledge, of the principles of Chemistry, of Physics, of Mechanics, of Geology, etc., is not sufficient to make a good manager of a blast furnace, a rolling mill, or a mine, and cannot be doubted at all that even perfect knowledge of the principles of administration does not confer a technical ability. But this has never been a good reason to neglect the study of the principles.

Are there principles of administration? Nobody doubts it. What do they consist of? That is what I propose to discuss today. The subjects of recruitment, organization and direction of personnel will form the subject of the second part of this study.

Principles of administration

I. Unity of command

There is only a small number of principles and even these flow from a single, fundamental principle; "Unity of Command." In practice, the principal is as follows:

Every action must be ordered by one person only or equally "For any act the person who carries it out should receive orders from only one boss."

Why should this be so? Why do all associations, all groups of men need one boss and one boss only? One could explain it as follows: it arises because of the near

impossibility that two people have exactly the same feeling, the same point of view, the same conception of execution on any subject whatsoever: or equally, through a sense of justice which makes us desire that each person has responsibility for his actions and for his actions alone. And there are other considerations as well, but I will limit myself with the statement "No one can serve two masters at the same time" says the proverb. And a popular saying adds, "Two people cannot both run the show."

Violation of the principle of 'Unity of Command' invariably produces the following results; confusion and despondency amongst the employees, conflict not only between supervisors and their superiors but also between the superiors themselves. And if the cause persists, the result is removal or destruction of one of the two parts of the duality, which causes a return to unity, and in each case there is a weakening of the enterprise that could lead to its downfall.

These facts are easily verified; industry, commerce, the family and the state provide innumerable examples.

From Unity of Command flow several secondary principles, which are, as it were, corollaries of the fundamental principles: these are (2) the hierarchical transmission or orders, (3) the separation of powers, (4) centralization and (5) order.

II. Hierarchical transmission of orders ("chain-of-command")

As an enterprise grows, there comes a time when the leader can no longer provide personal direction to every employee: he therefore appoints intermediaries to transmit directives and to supervise their execution. As the enterprise grows even further, the leader cannot even direct these first level intermediaries and he is obliged to create others to transmit his directives to the first and thus a hierarchy is formed. Its origin is therefore independent of "Unity of Command": it results from a limitation of personal abilities. But the principles of "Unity of Command" requires that the Leader pass through these intermediaries to reach the lower-level employees; departure from these regular channels provokes duality.

Such is the "Hierarchical transmission of orders" which is commonly known as the Hierarchical Principle. The results of ignoring this principle are ruffled feelings; discontent, discouragement and conflict, just like the result of ignoring the fundamental principle. Nevertheless, infractions are fairly frequent though sometimes caused by good intentions: for example, perhaps there is an agent at the third level who, finding that the normal channels are too long, gives orders directly to a first-level employee (X1), without passing through X2; meanwhile someone at the fourth level (X4) believing that he hasn't been understood, or for some other reason, gives direct orders to X2, resulting in a

duality of command and the inevitable consequences; discontent, confusion of responsibilities and the work is held up. In practice one constantly has to compromise respect for the hierarchical channel with the need for timely response.

III. Separation of powers – authority, subordination, responsibility and control

The division of an enterprise into distinct departments, each independent of the others but subject to a common authority, has diverse causes such as the great growth of business, or a diversity of operations demanding very different capabilities or the physical separation of the various activities. Whatever the cause for which this division into departments exists, one must, under the penalty of duality of command, make sure that each service and each function is clearly defined and delimited. These departments, functions and powers, created arbitrarily, generally have no independent existence; one could always constitute them differently and they can be changed. But as soon as they have been instituted they must be defined and delimited very clearly. If not, certain parts will be neglected or forgotten while other parts will be handled by several authorities at once. Much vigilance is necessary to avoid these twin perils.

The definition of departments and functions carries with it, naturally, the specifications of rights, duties and responsibilities for each. Each must know to whom and for what he gives orders, to whom and for what he must obey. On the other hand, each person in authority at every hierarchical level must always be familiar with what is going on in all areas under him. The means that can be used to carry out this responsibility are: direct supervision, control, meetings, reports and a good accounting system.

IV. Centralization

The command exercised by the higher authority and which, be it direct or through successive levels in the organization, reaches all parts of the organization, and the responses which return in the reverse sense, either directly or through the levels, to the central authority, constitute what one has rightly called "Centralization." It is not an arbitrary institution nor is it optional. It is an inevitable consequence, enforced, in fact, by Unity of Command. Centralization can be practiced in greatly different ways: the field can be left open for individual initiative, or it can be completely stifled. One finds examples ranging from a rigid structure with only passive obedience, to a vibrant organism where freedom of action spreads out with the most perfect subordination.

One leader, having great ability and a great influence can, without inconveniencing a small business, handle all matters, make his own decisions and impose a passive

obedience: as the enterprise grows, such a leader will become inadequate and his method will be deplored. Another leader will give a lot of authority to his subordinates, but what happens if these subordinates are only mediocre? It is therefore a matter of degree: one must consider the importance of various circumstances, the special difficulties which they cause, their extent, the distance which separates the various parts of the business and so on: one must also take account of the value of the employees. Only consideration of the circumstances can decide the respective balance between power and initiative, which it may be convenient to give to all employees. At the same time, it seems certain to me, the matter of subordinating being separate, that one must give all employees the largest amount of freedom of action and initiative possible. The strength of the leaders is augmented through the strength brought by lower-level employees and therefore they must be developed to the maximum extent possible. Let us not forget, in passing, that personal satisfaction and self-respect are often stronger than self-interest when it comes to stimulating individual initiative.

The great problem of centralization and decentralization can therefore be summarized as follows: compulsory centralization with the greatest possible individual initiative. As for the amount of authority and initiative to be given to each person, each case must be considered separately, it is the eternal question of degree, which is the great and continuing preoccupation of the administrator. Whether one buys or sells, builds or demolishes, recruits or dismisses, punishes or rewards, in a word acts or refrains from action, the line to follow is never clearly defined: one must select from various alternatives. Neither principles nor rules can abolish arbitrary decisions.

V. Order

One knows the formula for material order: "a place for everything and everything in its place." At the same time should there not be a specified place for everything and someone designated to put everything in that place? Unity of Command indirectly deals with this matter by imposing delimitation of departments and of the authorities, which are responsible for them. Every act of the enterprise and everything belonging to it must have its respondent, that is to say, someone who is responsible for it. It is order in deeds and with things: it is the means of avoiding waste of material and time and for avoiding conflicts.

Thus, Unity of Command appears with its retinue of secondary principles as an important and fundamental natural law, and this impression is only strengthened as one studies the point further. No one denies its importance; many people are vaguely aware of it but its value is only really appreciated by a few and if one considers that as with every

good rule of housekeeping it gets in the way of imaginative solutions, one can explain why it is violated so often. Numerous infractions occur, such as orders which arrive at their destination without having followed the hierarchical route, such as the encroachment by one department upon another, such as the stopping or disarray of the administrative mechanism due to the absence of the leader, and so on. At least five times out of ten it is errors of this type, which upset the business.

How astonishing it is when one sees duality of command not just established more or less surreptitiously but also imposed officially or deliberately as the head of the operation? Who of us has not seen the following on numerous occasions: two associates, proprietors of an enterprise, leaving their responsibilities and their authorities undivided? It is duality of command with definite consequences; they have quite a lot of fears, they vaguely know that this sort of a relationship does not always work. But they are full of goodwill and if, in addition, they are relatives (brothers, brothers-in-law, father and son as may happen quite often) they are filled with the family spirit, which they never doubt will make everything work out fine.

Experience allows us to assure them that harmony will not reign and either elimination of one of the associates will occur (and it is not definite that it will be the best who remains) or, alternatively, one or the other of them will disappear or be removed and Unity of Command will be re-established in fact if not by right.

In any case their association will suffer and the associates themselves: one cannot violate Unity of Command with impunity.

But one cannot constitute these associations always the way one would like and it is not always possible to avoid duality of command. Marriage is one example: earlier customs and subsequently the laws had established Unity of Command in the family and imposed obedience on the woman. Current customs, preceding the law, now proclaim the equality of rights. It follows that the family is one of the associations most prone to violation of Unity of Command. How can we avoid, in fact, different directives on the same subject given to children or to servants, or divergences of views on a multitude of points? It is the inevitable duality and its consequences: self-effacement, annihilation of one of the two associates, a breakdown in the association or permanent conflict.

Unless, by a careful and intelligent division of duties, one can reduce the causes of conflicts to a minimum by not letting overlaps continue, it is completely impossible to make this disappear.

For sure, duality of command is not the only danger, which threatens the peace of the family, but many of the problems that one attributes to characters or to passion are really for no other cause. And if it didn't take me too far from my subject, I would take pleasure in

showing how the famous problem of mother-in-laws is, above all, a problem of unity or actually of duality of command.

Thus, in propagating good administrative principles one is working not only for industrial prosperity and for the prosperity of the country but also for household peace.

Whatever the importance of Unity of Command, this principle is not sufficient to ensure that the body corporate functions well. Nor is fresh air sufficient to ensure the life of the individual. These are hygienic conditions that are necessary, but are not sufficient. Other prescriptions must take precedence, among which we find discipline and planning. This is where we leave the domain of principles in order to come into that of rules and methods. Before leaving the former I believe we should note the differences between Unity of Command, Unity of Action and Unity of Purpose.

We have just seen what Unity of Command means. Unity of Action means that all efforts are directed to the same goal: Unity of Purpose requires the same thoughts, the same intentions, and the same desires among all personnel. For these three unities to be realized at one time is an ideal; it is an enormous strength. Unity of Action involves Unity of Command. If, in addition, Unity of Purpose exists among all executive personnel the enterprise offers a considerable guarantee of success. Unity of Purpose is perhaps almost impossible to achieve in a committee. One cannot hope that every proposal might receive unanimous approval, but that isn't necessary and may not even be desirable; opposition and contradiction have their usefulness. But when the decision has been taken, action begins and discussion ceases.

VI. Discipline

The Dictionary Larousse defines this as follows:

"A group of unspoken rules or of written rules intended to ensure good order and regularity in a company or an assembly." This definition seems to me to be exact. Here we are not faced with the principle but an essential rule contingent or dependent on the goal, the constitution, the personalities and so on. These rules, which are as numerous as they are varied, have almost exclusively as their goal the achievement of Unity of Command and its corollaries. The rights, duties, responsibilities, and the place of each person must be determined and specified. Good rules greatly facilitate the progress of events. But whatever the value of these rules might be, their effectiveness and discipline itself will always depend on much tact, much skill and the conduct of the leaders.

VII. Planning

The most important of the means which one must use to ensure business success is planning. To create an industry one needs

capital, manpower, and time for the industry to function; one must also have outlets for the products. To forecast these needs and providing for them is the role of the Administrative department. Planning is even more necessary and much more difficult to achieve when the enterprise is larger and when the cycles of production and consumption are longer. When preparing the Annual Budget for a mine or factory and we are trying to anticipate just the events and results of the coming 12-months, we will find fairly substantial difficulties and some particular points will remain completely uncertain. This is even more of a problem when we try to look ahead for even longer period. Nevertheless, it is very necessary to make plans and programs for longer periods. Time being an essential factor in enterprises, one runs the risk of being discouraged by temporary difficulties or exulted by momentary successes if one has no course of program to follow. It is indispensable to avoid being diverted from the goal and to ensure that all efforts converge towards the goal over the longer period. One cannot anticipate with precision everything, which will happen over a longer period but one can minimize uncertainty and carry out one's program as a result.

Far from diminishing that freedom of action, which is always good to have, a thoroughly studied program will strengthen this liberty in difficult times by allowing all attention and all available forces to be focused on the threats. Besides, any long-term program should be susceptible to being changed according to the variety, complexity, and instability of events. Like any living object the industrial enterprise undergoes continuing transformations: the personnel, the tooling, the methods, even the goals of the association change: the program must without ceasing be kept, as far as possible, in harmony with the environment.

An Annual Budget, a general review of needs, conditions in the market place and probable results of the next financial period, plus ten yearly plans, revised systematically every five years, seem to me to correspond degree they ensure continuity of ideas, stability of designs and even, as an indirect consequence, stability in the personnel. Also, despite the difficulties which are presented, the efforts that are required, the passive resistance which is encountered, and the frustration which can result when plans are frustrated by events, this work must be done. Its practice has certainly been one of the most effective ways of getting results.

Each of us has his own procedures, his rules of thumb, and his particular methods, which make the job easier and arrival at the end more certain. Evidently these methods are not all equally good, some are better than others. In talking about them and offering them for the judgment of our colleagues, we are rendering a great service. That is what I was asking for at

the Congress in 1900 when I said, "Why cannot our engineers receive in administrative departments the same teaching that they have practiced with great success in their technical departments?" Today I will make a new appeal to my colleagues in bringing to the study of this question the personal contribution, which I had promised.

VIII. Organization chart

Among the methods, which I use and which have been the most useful, I would cite the Organization Chart. Here are three tables: the first represents the general organization of the company Commentry-Fourchambault et Décazeville. The second represents the organization of one of the mines and the third is the organization at one of the factories of this company. We note the great similarity between these last two tables. Six major titles are sufficient to group and encompass all departments and all the functions and the same titles apply equally in the mine and in the factory:

- 1 Personnel (recruitment, organization and operation);
- 2 Exploration or manufacturing;
- 3 Maintenance and new construction;
- 4 Sales and purchases;
- 5 Accounting;
- 6 Finance (provision and use of capital).

And then there is a seventh title:

- 7 Miscellaneous, a group of several secondary departments, which are not necessarily a part of the principal departments.

This method of representing the services applies equally well to all of the establishments in the company as the organization chart (1) for the whole company shows, it comprises four collieries, an iron ore mine, three factories and eight principal establishments employing about 9,000 people. These organization charts allow one to see clearly

- 1 that every function has a head;
- 2 that the hierarchical route is well defined;
- 3 that departments or sections within departments are well delimited;
- 4 that centralization is complete;
- 5 that a department can continue in the absence or disability of its head.

In order that the company's life should not suffer from interruption and in order that command can always be exercised and orders can always be transmitted to each of the employees in the enterprise, it is essential that authority is always represented to everyone. Absence, sickness or death of a department head should not bring the company's operations to a stop. If a head is disabled, he should be immediately replaced by a substitute who has been designated in

advance on the organization chart.

Every year, similar to a kind of inventory and also whenever a department is modified, one should re-evaluate this administrative template. Thereby one assures that every function is occupied, that no service is overlooked, that the authority and reporting line of each person is well determined and that Unity of Command is respected. All enterprises, from the smallest and simplest up to the largest and most complex, by lending themselves to this method of description and control, are able to fit this framework.

In each one of our establishments the organization chart is completed with a departmental plan, which shows the topographical limit of the department from the point of view of the organization and of control of material order. With these two kinds of organization tables for every act and for every object one can quickly find the employee responsible if the organization is good. If this result is not obtained, it is organization that is at fault and it must be rectified.

IX. Meetings and reports

Unity of Purpose and Unity of Action are facilitated by meetings and written reports. Conferences bring the heads of the separate departments together at regular intervals under a higher authority for the purpose of orchestrating the progress of the whole operation. One hour in conference per week can well avoid misunderstandings and particularly facilitate harmony amongst all. Weekly, monthly, and annual reports are also an excellent tool of direction and control but, as with conferences, these are instruments whose success depends particularly on the way in which they are used. Clever leaders find the opportunity to understand their subordinates, to stimulate their initiative and bring about amongst them Unity of Action and the greatest possible Unity of Purpose.

X. Accounting

Accounting reveals the state of the business. It is a kind of thermometer of its condition and its health. One must consult it continually. Every employee in the enterprise, from the lowest up to the Director, must know the results for that part of the service for which he is responsible. To be fulfilled, this condition requires an accurate and rapid accounting system. Accurate because one must have complete confidence in the figures, which allow one to judge whether, the route being followed is good or bad, and rapid because the information must be used to modify the direction when necessary. Information is often useless when it arrives too late. There are results of the work achieved on a day or in a week, in a month, in a year, which one needs to know as soon as possible. Some can be obtained in a few hours; some require longer. The profit and loss statement in a large enterprise, if completed 15 to 20 days after the end of each month in a final manner (except for

inventory corrections at the end of the year) provides, in my opinion, a good accounting system.

All these methods of which I have just given a simple account, and many others concerning supervision and control cannot easily be described except by giving examples and applications, which find their place in a memorandum, destined for the Bulletin. And I shall therefore return to that.

In conclusion, the essential features of a good administration are: Unity of Command, Discipline and Planning. These are the fundamental conditions for our social fabric. What are the necessary qualities for the person charged with achieving them? How should these people be organized? How should they function? That is what I shall examine in the second part of this study.

The 1908 presentation illustrates that Fayol had moved a step farther in developing *Administration Industrielle et Générale (AIG)*, the work that would establish him as a major management theorist. He made it clear that administration meant “to govern, or to manage a public or private enterprise”, including all of its operations. Thus his approach was a general management, rather than a shop management, financial management, or other specific functions of the firm, but oriented toward guiding the enterprise toward the attainment of its objectives. Although some have made a distinction between administration and management, Fayol made it clear in 1908 that these terms could be used interchangeably. If later translators had been cognizant of this 1908 definition, then we would not have witnessed the semantic battle about what was administration and what was management – they were intended by Fayol to be used in a substitutable fashion.

Fayol began to separate and define the duties of the manager but these were not yet fully developed. He noted these duties included foresight (planning and anticipating); recruiting, organizing, and directing the workforce; coordination; and establishing good relations between departments as well as parties in the external environment. In *AIG*, Fayol would embellish these ideas as the “elements” or functions of the manager’s job: planning, organizing, command, coordination and control. These elements were only rudimentary in 1908 and would blossom only with further work.

His principles, only a few of the 14 he developed later, were also captured in this 1908 paper in a developmental stage. One of his principles, planning, later would become an element of the administrator’s task; another, meetings and reports, emerged later as a “tool” of administration; and his

principle of accounting later became a method of gathering and reporting information for controlling. Other principles would endure and appear in *AIG*: unity of command; chain of command; authority and responsibility; and centralization as a matter of the degree of delegation or not.

Fayol asked a central question in the 1908 presentation – is there a better way to learn to manage other than by experience? His answer was yes – by developing a body of knowledge that could be taught. This could occur only if we developed good theory that could be refined through further study and experimentation. Administration was not an innate skill – but could be taught in colleges and universities as the foundation for further experiences. Managers were not born, but could be created.

In retrospect, the 1900 and 1908 documents illustrate how Fayol steadily built his major work on management. As a young engineer and mine manager, he kept a diary and recorded the experiences that he would later collect and condense for his colleagues. These were the foundations of his administrative theory that has influenced businesses and public administration for nearly a century. From the early thoughts of such pioneers we can further our understanding of the research and theory building process. In this manner the past informs the present.

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