

# Can Aristotle help us specify the very nature of management problems?

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**Abstract** : The question we address here is: “What is the very nature of managerial problems?”. We first argue that real management problems are those which do not have *a priori* solutions and for which the arguments for and against any important decision are more or less of equal weight. We then define managerial problems as **recurrent dilemmas**. Drawing on Aristotle’s distinction between theoretical and practical sciences, we then try to analyze the consequences of the previous definition on an epistemological and a pedagogical point of view.

**Keywords** : management problems; Aristotle; dilemmas;

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Among the myriad choices facing managers, Herbert Simon drew a distinction between programmed and nonprogrammed decisions (Simon 1960, p. 5): “...let us distinguish two polar types of decisions. I shall call them programmed decisions and nonprogrammed decisions, respectively. I hasten to add that they are not really two distinct types, but a whole continuum...”. The first of these were decisions for which one could formulate an algorithm, guaranteeing resolution of the problem once a number of basic elements were known. It might be said that problems necessitating this type of decision were not strictly management problems, since managers could quite easily delegate responsibility for solving them to those with the requisite technical skills. Such problems do, of course, imply a certain degree of supervision on the part of managers (with respect to selection of the basic facts, pertinence of the algorithm, etc.), but nothing more.

Nonprogrammed decisions, by contrast, were defined as follows (Simon 1960, p. 6): “*Decisions are nonprogrammed to the extent that they are novel, unstructured, and consequential. There is no cut-and-dried method for handling the problem because it hasn't arisen before, or because its precise nature and structure are elusive or complex, or because it is so important that it deserves a custom tailored treatment*”. It would seem to us that nonprogrammed decisions relating to new problems might helpfully be divided into two categories: there are, on the one hand, those decisions which will be programmed (or programmable) in the near future, once the new situation has been fully grasped, and, on the other, those which probably never will be. Let us take two examples by way of illustration: in the late 1820s, cost accounting constituted an ‘unstructured problem’ for St-Gobain (Nikitin 1990); the technique had not yet been fully mastered and the calculation of reliable costs in a newly competitive environment was considered to be a strategic, non-structured exercise. Discussions were thus held by the company’s board of directors in order to establish the most appropriate way to allocate overhead costs. From the mid-1830s onwards, its archives clearly show that this was no longer a matter for debate by the board, and that the issue had been delegated to the accounts supervisor. Cost accounting had become a structured decision. By contrast, decisions concerning significant investment (a buyout, or the building of a new plant, for example) are generally, by nature, unstructured decisions, since, as Anne Pezet (2000)<sup>1</sup> has demonstrated, the traditional instruments of investment decision-making (discounted cash flows, payback period, etc.) do

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<sup>1</sup> In her book, drawn from her PhD thesis, Anne Pezet studied 13 major investment decisions taken by the French aluminium industry between 1890 and 1990.

not determine the choice made. Although these tools are used, they serve more as a means of rationalizing *a posteriori* decisions already taken, in complex ways that fluctuate with changes in the composition and strategy of successive management teams.

Similarly, decisions concerning recurrent dilemmas (differentiation vs integration, exploration vs exploitation, job enrichment vs Taylorization, etc.) will invariably remain nonprogrammed decisions, dependent on an ever-changing context and requiring solutions that differ as circumstance dictates. In other words, we might say that there are, on the one hand, problems which have an *a priori* solution<sup>2</sup>, but these are technical, not managerial problems, and, on the other hand, true management dilemmas, which do not have an *a priori* solution and are a question of corporate leadership. The following quote from Michel Pébereau<sup>3</sup>, a leading figure at one of France's largest banks, illustrates this point (our underlining):

*"I would like... for a moment to dwell on the question of decision-making. Deciding anything is extremely difficult, particularly once you reach a certain level of management. Only the foolhardy could find it straightforward. Indeed, the decisions that fall to the head of a company are never the easiest ones: the simple, obvious decisions are normally made by those midway up the hierarchy. Only those decisions in which the arguments for and against are more or less of equal weight will ultimately land on the company manager's desk. And it is clear that for this type of choice, decision making tools are of no use at all. The head of a company is a 'decision machine', who must constantly live with doubt, and is always beset by worry. The only good decisions are those which have already been made, for once past this point, one must be able to implement them without falling prey to doubt. By contrast, doubt is an integral part of the process of preparing, of thinking through the decision, because of what is generally a very fine balance between the reasons for choosing this or that avenue. At the moment of decision, the chances of having made the right choice are quite evenly balanced; tenacity in seeing it through is what gradually increases the likelihood that the decision made was a good one."*

This quote echoed what we knew to be the Aristotelian conception of problems, and led us to reflect on the nature of management dilemmas. Despite the fact that the expression 'management science' has been used in universities for around fifty years now, the corresponding scientific community is still very far from a consensus on the type of scientific theories or principles that management science might produce, and it remains extremely

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<sup>2</sup> *A priori*: based on information acquired prior to experience.

<sup>3</sup> The conference took place at the Paris Dauphine University on 28 April 1993. At the time, Michel Pébereau was chairman of the French bank CCF; he is currently chairman of BNP-Paribas. The conference proceedings appear as working paper n° 9504 from the CREFIGE (European Centre for Research in Finance and Management), part of Paris Dauphine University

difficult to outline such a science with any degree of precision. Any definition of management science should indeed take as a starting point what distinguishes it from its nearest neighbours; it soon becomes apparent, however, that management science cannot be defined by its methods alone, since it shares them with most of the human and social sciences. Nor can it be defined by its subject (organizations), for this is a focus common to economics, sociology, politics and law, at the very least. Are there then questions both worthy of scientific research and specific<sup>4</sup> to management? David *et al.* (2000, p. 2)<sup>5</sup> suggests defining management in terms of the problematic issues – or *problématiques*<sup>6</sup> – it must deal with. The definition of a management problem, however, remains to be established; this is the main objective of the present article. We are not the first to have approached the issue of defining managerial problems (see Smith 1989, Smith 1995, Landry 1995), but others have largely dealt with such problems in terms of how consultants behave. Our intention here, by contrast, is to characterize management problems with regard to researcher behaviour.

The thesis we defend here is that although each management situation is of course unique, they all relate back to questions with which managers have been constantly faced for as long as organizations have existed and been managed; those in charge of large corporate entities must always choose between integration and differentiation, between short- and long-term objectives, between the interests of shareholders and those of employees, between profitability and ethics, between replicating existing resources and creating new ones, etc. As far back as 1878, the German financial market was already tackling the issue of asset valuation (“Cost value or market value?”<sup>7</sup>), just as today’s international markets question the pertinence of the notion of “fair value”. Such examples illustrate the dilemmas managers face time and again, and we maintain that it is these common management dilemmas which are the very bedrock of management science.

We felt it appropriate to discuss such issues with reference to an author who first broached them almost 2,500 years ago. Indeed Aristotle drew a clear distinction between the theoretical sciences, that is to say those which rely on demonstration (largely physics and mathematics),

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<sup>4</sup> What is specific is clearly both particular and general – particular to a species or group, and general to all individuals in that group.

<sup>5</sup> “Management may be defined as a class of problems underlying all forms of collective action: decisionmaking, rationalization, representation, legitimacy, cooperation, prescription, and so on.”

<sup>6</sup> The French word *problématique* serves as both adjective and noun. The adjective has the same meaning as its English equivalent problematic. In French, the noun has several different meanings, but seems to have only one in English (see note 10). It is a word that can be used in a wide range of contexts, but for our purposes, *problématique* shall be taken to mean a problematic question, in other words one to which there is no definitive and consensual answer.

<sup>7</sup> Richard 2005

and the practical sciences, focused more on action (ethics, politics and economics), and riddled with countless alternatives and unresolved questions.

In developing our arguments, we take a two-stage approach, firstly defining the nature of management problems (what is understood by the concept, followed by illustrative examples), and then examining the consequences of such a definition for the definition of management itself, in epistemological terms initially, and then from an educational point of view.

## 1. THE NATURE OF MANAGEMENT PROBLEMS

In an attempt to grasp the meaning of the French terms *problème* and *problématique*, we naturally consulted conventional dictionaries, as well as historical and etymological works of reference<sup>8</sup>. We then sought enlightenment from the great philosophers. However, since the expression *problématiques de gestion* (or managerial problems<sup>9</sup>) does not, as far as we are aware, feature in any dictionary, we also sought to illustrate it using examples.

### 1.1. IN SEARCH OF A DEFINITION

Recent editions of the French *Larousse*<sup>10</sup> dictionary confirm that each science has its own *problématiques*, and the definitions it gives are relatively stable over time: “*Set of questions that a science or philosophy might legitimately pose according to its methods, its subject and its points of view*” (1979), and “*Set of questions that a science or philosophy raises in relation to a particular field*” (1998). The 1979 edition of the French *Robert* dictionary gives two distinct meanings: “*The art or science of posing problems*” and “*A set of problems the elements of which are related*”; it is in this sense consistent with its historical counterpart (*cf.* below).

Use of the term *problématique* as a noun, however, is relatively recent – the *Robert* traces the first instance of such usage in a dictionary back to 1951, while it still does not feature in the *Petit Larousse* of 1957<sup>11</sup>. The adjective, by contrast, has been in use for much longer. In 1906,

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<sup>8</sup> We presume that carrying out the same search in English dictionaries would have yielded similar results.

<sup>9</sup> Several English-speaking authors have attempted to define a managerial problem (Agre 1982, Landry 1995, Smith 1989, Smith 1995). Agre (1982), whose definition was later adopted by Smith (1989), considers a problem to be “an undesirable situation that is significant to and may be solvable by some agent, although probably with difficulty”. The approach taken by these authors focuses entirely on the process of problem resolution, and is thus far removed from ours. There is nevertheless a very interesting typology of managerial problems in Smith (1995), pp. 690-692.

<sup>10</sup> There two main editors of dictionaries in France: Larousse and Robert.

<sup>11</sup> The same evolution may be observed in English, as the noun *problematics* dates back to 1955-1960. See <http://dictionary.reference.com/browse/problematics>. The English meaning (“the uncertainties or difficulties inherent in a situation or plan ») seems however slightly different from the French *problématique*.

the *Larousse* defined it using three synonyms: “*Uncertain, equivocal, dubious*”. Its meaning has changed little since, with the 1979 edition also using three synonyms: “*Something of which the outcome is in doubt, uncertain, risky*”; these were already a feature of the 1937 *Larousse*. The apparent divergence in meaning between the noun and the adjective is somewhat intriguing, and Robert’s classic *Dictionnaire historique* sheds a little more light on how the two have evolved: “*Adj. and n. (fem.); originally spelt problematique (1490), borrowed from the Low Latin problematicus (‘a problem to which no solution can be found’), itself taken from the Greek derivative problêmatikos. The word took on the Latin sense ‘difficult to resolve’, ‘in doubt’, passing into widespread use to refer to that which is not certain, the existence or truth of which is questionable (c 1679). By extension, it applied to the dubious, equivocal or mysterious (1798), to anything of a hypothetical or enigmatic nature (1852). Later, influenced by the German Problematik and in a more specialist context, the feminine noun problématique (1951) referred to the technique of skilfully posing a problem or a coherent set of problems, and, by metonymy, all the problems arising in relation to a given subject.*”

The etymology of the word provides further clarification, informing us that a problem, from the Greek *problema*, is that which is ‘thrown down [before us]’<sup>12</sup>. It is the obstacle that threatens to trip us up. At best, it catches our eye, forces us to slow down, make an effort either to go round it or step over it. At worst, it stops us dead in our tracks.

Although today we tend to make no distinction between a *problématique*, or set of related problems, and a research question, Kant likened the problematic to the hypothetical, in contrast to two other terms, the assertoric – that which is simply declared – and the apodictic, that which is proven. Between two certainties (the act of faith and the proof), what is not certain creeps in, and it is this uncertainty that captures the very essence of the concept of ‘problematic’. Aristotle also referred to this same quality of uncertainty ( Barnes 1995, 174)<sup>13</sup>: “*Not every problem, nor every thesis, should be examined, but only one which might puzzle one of those who need argument, not punishment or perception. For people who are puzzled to know whether one ought to honour the gods or love one’s parents or not need punishment, while those who are puzzled to know whether snow is white or not need perception. The subjects should not border too closely upon the sphere of demonstration, nor yet be too far removed from it; for the former cases admit of no doubt, while the latter involve difficulties too great for the art of the trainer*”.

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<sup>12</sup> According to the *Robert historique* dictionary, the word is derived from the Greek *proballein* – *pro* (in front, before) and *ballein* (to throw). It may also be noted that the word “object” has exactly the same etymology, albeit Latin rather than Greek (“that which is thrown before us”).

<sup>13</sup> This is the reference of the book used by the author of the article. The international reference is: *Topics*, book I, 11, 105a, 1-10.

In the same text (Barnes 1995, 174)<sup>14</sup>, we find a further expression of uncertainty: “*Problems also include questions in regard to which deductions conflict (the difficulty then being whether so-and-so is so or not, there being convincing arguments for both views)*”. This is confirmed by Hans-Georg Gadamer (1996, p. 400): “*For Aristotle, the word problema referred to issues that arise as a series of alternatives, or unresolved questions, because there are arguments of every kind in favour of this or that possibility, and we do not feel able to reach a decision using conclusive reasoning, for these issues are beyond us. Problems are not therefore true questions, questions one might ask, and in doing so receive, from the very source of their meaning, the kernel of a solution; they are merely matters of opinion, alternatives, and will always remain so, and thus the only way to deal with them is dialectically... The very concept of a problem is such that it cannot be resolved clearly by recourse to reasoned argument*”.

Let us take the example of a classic management problem: what degree of latitude should be given to employees within the same department? It is a question with which the vast majority of managers are indeed faced, and the answer is truly problematical. Independence can be conducive to a greater sense of responsibility and enhanced performance in certain situations, and yet strict discipline in the carrying out of set procedures can also enable the best possible performance to be attained. This problem has arisen time and again throughout the centuries, as we will see below. We might therefore tentatively define a management problem as *a recurrent dilemma facing managers*. Moreover, such a definition would in effect reconcile the meanings of the adjective and the noun, since the latter (the French *problématique*) would be synonymous with a problematic question.

Each resolution of this dilemma is thus inherently problematical, for it is bound up with one particular – and hence unstable – context; it is also dubious, in that the slightest environmental modification is liable to render it inadequate. Our definition could also shed light, from a different perspective, on management situations: such situations are by nature problematic, for otherwise it simply comes down to a technical problem with a solution that is not context-dependent. Let us now look at some examples of such dilemmas.

## **1.2. SOME EXAMPLES**

In order to put a little flesh on the bones of our argument, we can now illustrate it using examples of management problems that are a daily reality for the vast majority of managers. Our first such example has a bearing on both human resource management procedures: should

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<sup>14</sup> *Topics*, Organon V, book I, 11, 104b, 10-15.

staff be left to organize themselves or must strict discipline be imposed upon them? There is no shortage of textbooks implying that the history of management is one of a smooth and inevitable transition from the assembly line to multiple task working. Such a view borders on the mythical, and does not stand up to a closer analysis of working practices: certain firms were promoting “multitasking” before Taylor’s time, while conveyor belt manufacturing still lives on in vast swathes of industry today. The example of independent workshops, developed in 1866 at the *Cristalleries de Baccarat* (see quote below) but also in 1947 at Bat’a (Czechoslovakia) and in 1970 at Volvo (Sweden), shows that, on the contrary, the organization and supervision of staff is clearly a long-standing and recurrent problem. To illustrate this, let us turn to Father Jules-Théodose Loyson, writing in 1866: “[Ordinarily], each worker works for himself, and he alone is responsible for his diligence and skill. Here, this is not the case. The glassmakers, cutters and decorators are all grouped into ‘companies’ of between five and twelve men, according to their occupation. Each company is overseen by a designated worker, who is responsible for his men and for the standard of work produced. Wages are still paid by the piece, at rates known to all. A daily tally of each group’s work is kept in as many registers as there are companies. These registers are available to the workers at all times. The daily figures are simply added to give a monthly total. Various costs are deducted, and then each worker is paid in line with his grade; the surplus, which forms what is known as the ‘gratification’, is shared along pre-determined lines between the workers of the company. The result of this type of structure is that, strictly speaking, there is no such thing as a supervisor or shop foreman. There are only employees allocating the work and the finished articles, and the various companies, each of which is an independent entity. Not only does a degree of competitiveness develop naturally between these small communities, but each member of the company has a personal interest in its success. Should the head of the group become incompetent or unfit for the role, his men pull him into line, or complain that such an association is detrimental to them... These shared interests and two-way control mechanisms heighten the workers’ sense of personal responsibility, as well as their awareness of the rights and duties of a higher responsibility, that of solidarity...”

Conversely, we find several authors, convinced that a new form of Taylorism has emerged (Brandon 2001, Lund & Wright 2001), that the world of Charlie Chaplin’s *Modern Times* has not yet been consigned to history, and that the spirit of Taylor is still very much alive in many companies, rekindled by the effects of the total quality, zero stock and just-in-time mindsets. Taylorism lives on, in its original sense, within factories that have remained practically unchanged, in some cases, since the start of the Industrial Revolution, and it has also evolved,

and can be found lurking below the surface of more modern organizational structures, including those in technologically advanced sectors. We may cite the examples of checkout staff in supermarkets and hypermarkets, fast food or call centres resembling industrial sweatshops of the past. A new kind of Taylorism has developed, and is the precise opposite of the concurrent trend towards employees with multiple roles, more independence and responsibility, and better customer care skills. According to Jean-Pierre Durand<sup>15</sup> “Taylorized” working has gained significant ground over the last 30 years. This dilemma remains – the thorny issue of “flexibility vs. discipline” – and solutions must be constantly reworked to adapt to the changing contexts thrown up by new technologies and new forms of organization.

One could mention other dilemmas, such as that linked to what certain authors have termed ambidexterity (Duncan 1976, Birkinshaw & Gibson 2004, He & Wong 2004, Besson & Soulerot 2009). Managers are indeed forced to find a compromise between exploration and exploitation, to strike an ever-changing balance between these two imperatives. Another famous dilemma is that developed by Lawrence et Lorsch (1967), i.e. integration vs differentiation, though the authors admit (p.8) that “*The concepts of differentiation and integration are not novel*”.

Fields such as accountancy and auditing are equally rich in recurrent dilemmas: should assets be priced according to their market value, or rather a pre-established, contract or cost value? This problematic question is very much relevant today, with the debate surrounding the concept of “fair value”, but it is also a timeless issue, as Jacques Richard (2005) and Stephen Zeff (2007) have demonstrated. Furthermore, all questions relating to asset valuation are both problematic and longstanding; take, for example, the issues concerning the valuation of businesses – should the assessment of such worth be based on their monetary value or on future profits? In 1829, when there was talk of a possible merger between Saint-Gobain and St-Quirin<sup>16</sup>, the merits of estimating the future profits of the two firms, in order to establish the terms of the exchange, were already recognized: “*It would seem to me that in this matter [the proposed merger], everything, on both sides, boils down to ascertaining the cost of a square foot of glass. Everything hinges on this calculation, everything comes down to this one bare minimum. In this we find the fruit of ingenuity in chemistry and engineering, of sheer physical effort, the advantages of location, industry, order, the strengths of the workforce – in short, the product of all economic resources of every kind, and not only the more or less productive core of capital*

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<sup>15</sup> Professor of sociology at the University of Evry (France). The quote may be found in ‘Le Monde Initiatives’ n°17, March 2003, p.12

<sup>16</sup> The two most important glass makers in France at that period.

*and labour; this cost, or cost price, along with the number of square feet produced, and the actual market price achieved, which naturally reflects the quality or degree of perfection of the product, will enable one to assess the intrinsic value of each business, that is to say what it will bring to the union*<sup>17</sup>.

In managing a team, one might also be faced with the following dilemma: is it better to foster a team spirit or to encourage competition between members of the group?. In the field of public management, every investment decision depends on the propensity of the decision-maker to favour political logic or managerial rationality. In costing, too, we find examples of problematic issues that, quite clearly, arise again and again – the allocation of overheads has posed a problem for managers ever since such costs first gained significance some 200 years ago. No solution is guaranteed; its success (or otherwise) is more a product of the particular context in which it is developed than any intrinsic merit. Each of the examples cited above brings us back to Aristotle's "*questions in regard to which deductions conflict*"<sup>18</sup>, and although they relate largely to the fields of accounting, finance, management and auditing, it would not seem unreasonable to assume that further examples might easily be found in other areas of management. Marie-Louise Héliès-Hassid (2000), comparing Emile Zola's novel *Au bonheur des dames* and present-day commercial practices, points out "*the permanence of some of the driving forces of business*", the "*revival of age-old concerns*" and the existence, in the business world, of "*fundamentals that defy the passing of time*".

## **2. THE VERY NATURE OF MANAGEMENT**

The definition we have adopted is clearly not without consequences for the nature of management science. If the problematic questions we face are all recurrent dilemmas with no definitive solution, what knowledge can we actually produce (epistemological concerns) and how might we teach it? (educational concerns). We will approach these two issues in reverse order, for the latter are obviously "primordial"<sup>19</sup>.

### **2.1. ARISTOTLE AND MINTZBERG AGREE**

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<sup>17</sup> St-Gobain archives in Blois (France), AA17, file 2, "Procès-verbal historique de la session de la compagnie de St-Quirin, 1st June to 13th July 1829"

<sup>18</sup> *cf.* note 13, above.

<sup>19</sup> In the sense of "the oldest, that which has existed since the very beginning".

If management science consists of a series of *problématiques*, never definitively resolved, the question then arising is that of how it should be taught. The study of management techniques is of course vital, yet by no means exhausts the subject, since these techniques are but the instruments and music theory of the music student: knowledge of these does not make him a virtuoso, nor indeed even a musician. The would-be manager must therefore be able to step into managerial shoes, to prepare himself for the role by acquiring indirect experience using case studies in which there is no one single, ready-made solution. What is more, discussion of the exact nature of a problematic question often goes hand in hand with debate on the utility of case studies in the teaching of management. Moreover, the idea of using real-life scenarios to shed light on complex issues is not a new one; it dates back, at the very least, to the inter-war period, when Harvard made the method its own. Almost all educational establishments teaching management science later followed in the wake of this prestigious institution<sup>20</sup>.

A case study may be defined as a problem that, although arising in quite unique circumstances, is representative of a whole range of other situations. Finding a resolution to the dilemma it encapsulates, by means of discussion, should enable students to gain experience; it serves as a sort of “experience simulator”. While they know perfectly well that the exact same problem will never arise again, each aspiring controller knows intuitively that he could well find himself in similar situations *mutatis mutandis*<sup>21</sup>. The problematic nature of management situations is thus what makes the case study a particularly apt teaching method<sup>22</sup>. “*The case study is a focus for learning that seeks to explain the complexity of the real world, and is part and parcel of a systematic, more global analysis; its subject is presented as a problem, first and foremost a spatial problem, featuring some degree of conflict between the parties involved*”<sup>23</sup>. Repeatedly examining the same problematic issue, by means of case studies in which the main players and the context differ each time, enables us to better understand the issue, for this alone can help us when we find ourselves faced with that same problem in what, by definition, will be a totally new situation<sup>24</sup>. However, in teaching management science, one cannot simply serve up case studies one after another, or at least not without the risk of slowing down student progress

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<sup>20</sup> Use of the case study method has also been subject to a certain degree of criticism, although even its critics do not question the basic need for teachers to make use of what can only be, by definition, unique “one-off” experiences.

<sup>21</sup> Which means “The necessary changes having been made”, for one can never use *ceteris paribus* reasoning.

<sup>22</sup> If we perform an Internet search using the keyword “case study”, it soon becomes clear that numerous disciplines make use of this teaching aid, and have debated its merits and its limits.

<sup>23</sup> Pascal Jacquemond (a schools inspector in the Grenoble region); for details, see <http://www.acgrenoble.fr/histoire/didactique/general/fig2003/etudecas.htm>. Although he was referring to the use of case studies in history, this definition applies equally well to management.

<sup>24</sup> On this issue of repetition, cf. Moriceau 2003.

considerably. Each problematic situation, each individual case, relates back to theories that ought to be outlined, in an ad hoc lesson, or indeed when discussing the case studies themselves. Having considered how to teach management, others have posed the question “*To whom should it be taught?*” Henry Mintzberg (1989, Chapter 5) is of the opinion that management cannot be taught to those without professional experience: “*This led me to believe that management should only be taught to those with considerable organizational experience, combined with proven leadership capacity and the necessary intelligence*”. This well-known stance, from someone who passes as an iconoclast, nevertheless resembles somewhat the position taken by Aristotle, albeit in a different context: the great philosopher made a distinction between the theoretical sciences<sup>25</sup> and the practical sciences (those investigating human activities). With regard to the latter<sup>26</sup>, he noted that “young people are not well suited to receive instruction in ethics, for they lack experience, which is the only thing that can make such lessons beneficial” (Crubellier and Pellegrin 2002, p. 152). Speaking of politics, Aristotle stated the following (a view we are inclined to extend to the field of management): “*This is why a youth is not a suitable student of political science; for he lacks experience of the actions in life, which are the subject and premises of our arguments. Moreover, since he tends to follow his feelings, his study will be futile and useless; for the end [of political science] is action, not knowledge*”.(1999, 3)<sup>27</sup>. The similarity between these two remarks is indeed striking – the practical sciences (Mintzberg’s management, along with Aristotle’s ethics, politics and economics) can only be taught to those who have already gained some practical experience, for this alone enables them to profit by such instruction. Each of us has appreciated the truth of this when comparing how the same case study is handled differently by, on the one hand, a class of first-year students and, on the other, a group of “practitioners”. Compulsory in-house placements and the recruitment of teachers with professional experience both reflect this same educational concern.

An exercise, with its one single solution, is quite the opposite of a case study, a different “answer” to which is produced each time as one of many possible solutions, through interaction between a teacher and a group of students, who differ only in the degree of experience they possess. Moreover, an aptitude for solving exercises and an aptitude for dealing with case studies do not necessarily correspond to the same abilities and skills. When faced with a case

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<sup>25</sup> “Primarily, Aristotle recognized as ‘theoretical’ all those sciences the subjects of which are independent of human activity” (Crubellier and Pellegrin 2002, p. 216).

<sup>26</sup> Although this quotation concerns ethics alone, numerous passages in his *Nicomachean Ethics* show that the claim could equally be made of politics, and even medicine and management (*Nicomachean Ethics*, book II, 1104a, 10).

<sup>27</sup> *Nicomachean Ethics*, book I, 1095a, 1-5.

study, one must be able to identify the problem clearly and pinpoint the set of issues hidden therein. Although various different groups dealing with the same case study may put forward similar solutions, these might also differ widely, depending on the context and the group in question. Furthermore, it is possible to work on a case study developed 20 years earlier and still draw lessons of great worth from it, because the same problematic issues are at work. It is unlikely, however, that the case study will be approached in quite the same way. In contrast to exercises, each with its one and only solution, problematic questions live on, they endure in spite of the countless solutions put forward. A case study focuses on individual events, each of which has a role therein, although it is not their individuality as such that interests teachers and researchers; we seek rather to understand them, in other words, to find in such events a sort of generality, or, perhaps more precisely, some specificity.

The setting up of independent workshops at Baccarat, Bat'a or Volvo are three individual events that relate to the particular situations of three businesses in three different countries at different times. Yet the characteristic they all share is a measure aiming to encourage a certain form of employee-led organization. We thus move from the unique and individual to the specific<sup>28</sup>, in other words, we have an “intelligible” case study.

## 2.2. EPISTEMOLOGICAL CONCERNS

If we acknowledge, along with David, Hatchuel and Laufer (2000), that “*management may be defined as a class of problematic questions*”, and if we accept the definition of the term *problématique*, as given above, we must then attempt to draw some conclusions from an epistemological point of view. We will firstly suggest a distinction between the techniques of management and the science of management, before reflecting on the permanence of management problems and the categorization of management science as one of the practical sciences described by Aristotle.

Over the course of centuries, the epistemological boundaries and status of what we now know as management have shifted somewhat: at the time of Colbert (Finance Ministry of the King Louis the 14th), the “science of business” (*science des affaires*) comprised some knowledge of law, accounting and arithmetic, and was deemed nothing other than a certain *savoir-faire* drawn from experience. Mathieu de La Porte (1704, p. iij) defined “the science of the merchant” thus:

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<sup>28</sup> The specific is peculiar to a species or group, which is why the term may refer as much to what is general (i.e. a characteristic of all individuals within the group) as to the particular (insofar as what is specific is not found in other species).

*“The Science of the Merchant is twofold. It consists of: 1. Knowing all the qualities and all the circumstances of that in which he trades. 2. Knowing how to keep the accounts necessary to conduct such business in a correct and ordered fashion, which thereby affords perfect knowledge of it at all times. The knowledge contained within the first point is acquired more through the Trader’s use thereof than by any such precept as one might lay down.*

*The Science of the second point, that of the account-keeping which the merchant undertakes at his premises, may be condensed to a number of principles, or unquestionable rules; and that is what I propose to do in this work.”*

The idea expressed by Mathieu de La Porte here is one that universities have applied ever since they began sending their students on work experience placements – part of one’s knowledge of management “*is acquired more through [...] use thereof*” (i.e. through practice) than “*by any such precept as one might lay down*” (classes and lectures). What matters here is experience, that is to say, one’s *savoir-faire* in dealing with new situations. In view of this, the objective of management science would therefore be to document<sup>29</sup> and explain the problematic questions that managers face, and which their only real credentials for tackling successfully, at least until relatively recently, were their experience and their shrewdness<sup>30</sup>. Despite the fact that firms have clearly been run – and quite often well run – for some considerable time, this objective has only come to the fore during the last 20 or 30 years<sup>31</sup> – in other words, ever since attempts to discover hypothetical “laws of management” were abandoned<sup>32</sup>.

Contrary to what the creators of certain mathematical models might have us believe, time does not behave like other variables, and *ceteris paribus* reasoning is simply not possible in management. If it is indeed a science, then it can be but a “historic” science, i.e. one in which it is impossible to establish universal and permanent laws, as contingency theory so rightly reminds us. Those still harbouring doubts about this have only to try a simple test – to cite merely one of these management laws. Any such regularities as one might observe are short-lived, although what can be stated with some certainty is that managers constantly find themselves facing recurrent dilemmas; for as long as organizations have existed, and man has

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<sup>29</sup> cf. the typology of managerial problems suggested by Smith (1995, pp. 690-692).

<sup>30</sup> There is no shortage of examples illustrating how these two qualities enable the technically incompetent, and even self-taught, to succeed in business.

<sup>31</sup> One of the last vestiges of scientism is the 1982 work of Peters and Waterman, who claimed to have discovered the principles of excellence. The fact that such large numbers of this work were printed was somewhat disquieting, and only served to intensify the need for a new type of management science for which the academic community could vouch.

<sup>32</sup> In France, the expression “management science” first appeared in the work of Pierre Tabatoni in May or June 1969, master’s degrees in the discipline were created in 1970, and the first competitive entrance examination for the recruitment of management science teachers took place in 1977. Epistemological debate in this field did not, however, emerge until the mid-1980s.

been at the helm, there have been choices between caution and risk, between the constraints of production and those of the market, between safeguarding the interests of particular stakeholders and seeking the common good, etc. This tension between two extremes calls for difficult decisions to be made, and necessitates a solution specific to each unique situation. The businessmen of the Middle Ages, as described by Jean Favier (1987, from p. 291), were already familiar with this type of decision-making, and with choosing the degree of risk across a number of different types of transaction.

The historic nature of management has long been denied by those seeking to model it on a science such as physics. Paul-Antoine Miquel (1991, p. 20)<sup>33</sup> has in fact observed this phenomenon repeatedly as new sciences emerge: *“The first characteristic of all the human sciences is the fact that their subject is always engulfed by the historical perspective... Their second characteristic is that they are most often formed by rejecting this presupposition”*.

This fundamental historic element would thus appear to be a feature of all the human sciences, those which Aristotle termed “practical sciences”. *“In order to characterize the scientific speculation applying to human phenomena, Aristotle invented the notion of a practical science – in other words, one concerned with action (praxis), which should be understood as freely undertaken human activity”* (Crubellier and Pellegrin 2002, p. 153). For the founder of the Lyceum, these practical sciences encompassed ethics and politics, to which he also sometimes added economics<sup>34</sup>, the science of domestic administration. Some two and a half thousand years later, we must of course exercise a degree of caution if we are not to fall headlong into the trap of anachronism that awaits the unwary. It is nevertheless beyond doubt that management is, firstly, a science of human activity, and, secondly, with respect to a certain number of the problematic questions with which it deals, that it is comparable to domestic administration<sup>35</sup>. The practical sciences were characterized by features similar to those of management – their subject is marked by an irreducible element of contingency, their objective is not knowledge alone, but rather to guide our actions, and their teachings can only truly benefit those who have already gained a certain degree of experience. It is therefore not hard to see why Pellegrin and Crubellier (2002, 434) felt able to state that *“there is not, so to speak, a single one of the*

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<sup>33</sup> It should be noted that Paul-Antoine Miquel did not classify management science among the human sciences, no doubt because he was unaware of its existence.

<sup>34</sup> Crubellier and Pellegrin (2002, 151) consider that “economics, which is concerned with the administration of family affairs, is certainly not an invention of Aristotle himself”, but this matters little for our purposes

<sup>35</sup> Until very recently (1950s), the term “administration” was used to denote what would today be referred to as “management”.

*disciplines emerging before our very eyes that cannot ultimately be found to have an Aristotelian foundation”.*

Our conclusion will take the form of four basic propositions: we have put forward a definition of the French term *problématique* – a recurrent dilemma facing managers – that reconciles the meanings of the adjective and noun, as well as underscoring the constant process of questioning management implies.

Between that which is simply stated (“God is love”, for example) and that which is proven (Archimedes’ principle), we might deduce the existence of a sphere of knowledge based on rigorous reasoning and a scientific approach, but not universal and permanent in nature. This is where Kant’s hypotheses belong, or the practical sciences of Aristotle. We know, for example, that, depending on the situation, a degree of cohesion within a crisis-stricken business can be a force for good or for ill – in some cases, it can strengthen a team to ride out the storm, while in others, it is wiser to let some fuses blow in order to spare the organization as a whole. Thorough examination of such problematic issues could constitute the corpus of management science.

This theoretical knowledge<sup>36</sup> can only be taught by looking at examples and case studies, from each of which the underlying problematic issues should be teased out, with a reminder of the relevant theories. The teacher thus becomes one who ‘accompanies’ his pupils, a role that reflects an ancient meaning of the term pedagogy<sup>37</sup>. Documenting and researching the key problematic issues and dilemmas of management will enable us to develop cumulative knowledge and reliable points of reference in the field of human activity, which is, by nature, in constant flux.

The answer to the question “Can management problems be solved?” depends on who is to solve them, and on what is understood by the term “solve”. Because they “make do” with ad hoc, tailored solutions, managers can indeed solve such dilemmas, but their practical solutions cannot always be successfully replicated. For this reason, researchers, in seeking universal and permanent solutions, will be unable to “resolve” these problems.

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<sup>36</sup> Ultimately, whether or not such knowledge is termed “science” is of relatively little interest; the only real issue is that of academic prestige, which some will find largely illusory.

<sup>37</sup> The Greek term *Paidagōgos* referred to the slave responsible for taking the children to school. In a more figurative sense, the pedagogue later became “he who accompanies others on the road to knowledge”. According to the *Robert historique* dictionary, this meaning disappeared during the eighteenth century.

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