

A. David, A. Hatchuel, R. Laufer, *New Foundations of Management Research*, Paris: Presses des MINES, collection Economie et gestion, 2012.

© Presses des MINES - TRANSVALOR, 2013
60, boulevard Saint-Michel - 75272 Paris Cedex 06 - France
email : presses@mines-paristech.fr
www.pressesdesmines.com

© Photo de couverture : Centre Energétique et Procédés MINES ParisTech, calculs effectués sur les plates-formes Salomé (CEA, EdF, OpenCASCADE) et Code Saturne (EdF).

ISBN : 978-2-911256-91-2
Dépôt légal : 2013
Achevé d'imprimer en 2013 (Paris)

Tous droits de reproduction, de traduction, d'adaptation et d'exécution réservés pour tous les pays.

New Foundations of Management Research

Collection Économie et Gestion

Dans la même collection:

Pierre-Michel Riccio
TIC ET INNOVATION
ORGANISATIONNELLE

Ouvrage coordonné par Serge Agostinelli,
Dominique Augey, Frédéric Laurie
ENTRE COMMUNAUTÉS ET MOBILITÉ:
UNE APPROCHE INTERDISCIPLINAIRE
DES MÉDIAS

Sophie Brétécher, Cathy Krohmer
FRAGILES COMPÉTENCES

Julie Labatut
CONSTRUIRE LA BIODIVERSITÉ

Armand Hatchuel, Olivier Favereau,
Franck Aggeri (sous la direction de)
L'ACTIVITÉ MARCHANDE SANS LE
MARCHÉ ?

Pierre-Michel Riccio, Daniel Bonnet
MANAGEMENT DES TECHNOLOGIES
ORGANISATIONNELLES

Daniel Fixari, Jean-Claude Moisdon,
Frédérique Pallez
L'ÉVALUATION DES CHERCHEURS

Grégory Rolina
SÛRETÉ NUCLÉAIRE ET FACTEURS
HUMAINS

Erik Hollnagel, François Pieri,
Eric Rigaud (editors)
PROCEEDINGS OF THE THIRD RESI-
LIENCE ENGINEERING SYMPOSIUM
Erik Hollnagel, Eric Rigaud (editors)
PROCEEDINGS OF THE SECOND RESI-
LIENCE ENGINEERING SYMPOSIUM

Olivier Bomsel, Anne-Gaëlle Geffroy,
Gilles Le Blanc
MODEM LE MAUDIT

Claude Riveline
ÉVALUATION DES COÛTS

James G. March, Thierry Weil
LE LEADERSHIP DANS
LES ORGANISATIONS

Olivier Bomsel, Gilles Le Blanc
DERNIER TANGO ARGENTIQUE

François Huwart, Bertrand Collomb
LES NOUVEAUX CIRCUITS
DU COMMERCE MONDIAL

Thierry Weil
INVITATION À LA LECTURE
DE JAMES MARCH

Economic and Industrial Reform
in Lithuania, Latvia and Estonia
NEW NEIGHBOURS IN EASTERN
EUROPE

New Foundations of Management Research

Elements of epistemology
for the management sciences

Coordinated by
Albert David
Armand Hatchuel
Romain Laufer

Table of contents

FOREWORD.....	9
Management as a legitimate academic field	9
An intense epistemological debate	11
 GENERAL INTRODUCTION	 15
Management sciences and social sciences: a lack of identity	15
New federating foundations	16
Beyond Management... The new territories of the management sciences	17
 CHAPTER 1 - NEW HORIZONS FOR THE MANAGEMENT SCIENCES?	
TOWARDS A THEORY OF COLLECTIVE ACTION	23
1. The management sciences: from educational project to scientific project.....	24
2. Nature of the firm and revelation of an object	31
3. “Action”: a central position in contemporary culture.....	39
4. Dynamics of firms and genealogy of rationalisations: four core theses	43
5. An axiomatic theory of collective action: the principle of non-separability	48
6. Returning to collective learning: the relations between prescription and rational myths	53
 CHAPTER 2 - INSTITUTIONAL FOUNDATIONS OF MANAGEMENT: LEGITIMACY, ORGANIZATION AND NEW RHETORIC.....	 65
1. Conditions to be fulfilled by the conceptual framework	67
2. Questions of method.....	69
3. Question of content.....	77
 CHAPTER 3 - LOGIC, EPISTEMOLOGY AND METHODOLOGY IN MANAGEMENT SCIENCES: THREE HYPOTHESES REVISITED	 107
1. Production of scientific knowledge: an abduction/deduction/ induction recursive loop	108
2. Positivist paradigm and constructivist paradigm in management sciences.....	120
3. An epistemologic and methodological integrating framework for management sciences.....	125

CHAPTER 4 - 50 YEARS OF RESEARCH ON STRATEGY: NORMAL SCIENCE OR EPISTEMOLOGICAL OPENNESS?	135
1 - Fifty years of research on strategy: the discipline's virtues and vices	136
2 - The great transformations	141
3 - Widening the scope and the knowledge-based projects.....	145
 CHAPTER 5 - MANAGEMENT AND COMPLEXITY: HOW CAN A POLYSEMIC CONCEPT BE IMPORTED INTO MANAGEMENT?	157
1. Complexity in the technical sense	158
2. Complexity in the metaphorical sense.....	162
3. The complexity of systems involving human players	164
 CHAPTER 6 - DECISION AID TODAY: WHAT SHOULD ONE EXPECT?	173
1. From operational research to decision aids.....	173
2. Rigorous concepts to analyze and communicate	179
3. Procedures and tools to develop recommendations and/or to help cooperation in a decision.....	185
 CHAPITRE 7 - RHETORIC: PARADIGM FOUND	211
1. History of rhetoric	213
2. The different levels of analysis of rhetorical processes	215
3. Marketing as a particular form of rhetoric	216
4. Research directions opened by the rhetorical analysis of management	223
 CHAPTER 8 - INTERVENTION METHODOLOGIES IN MANAGEMENT RESEARCH	231
Introduction	231
1. Action research [Lewin, 1951].....	232
2. Action science [Argyris et al., 1985].....	235
3. The science of decision aiding [Roy, 1985, 1992].....	237
4. Intervention research in management sciences [Hatchuel, 1986, 1994b; Moisdon, 1984, 1997]	239
5. Intervention research as a general methodology for the management sciences?....	241

Foreword

This book is the translation of a French book about the foundations of management research and science. First published in 2001, the book received important and unexpected interest from the French Management community. It has been reprinted in 2008 with the same reception. Few books in the recent history of French management thinking had a similar impact. The event was hardly predictable, as the book attempted to critically rethink the nature and epistemology of the field; it also claimed that Management should be seen neither as applied economics, nor as applied social science but as a basic science in itself. It contributed, with other works, to a revival of French management thinking during the 90's, a movement that led to a recent collective publication by the French society of Management (SFM).

The present English translation aims to share with international colleagues the specific debates and propositions addressed by the book. Hopefully, they may take part in the worldwide aggiornamento of Management research and teaching that is recurrently called for in the best academic institutions of the field.

Since WW2, the global influence of French research in the management literature has been a matter of paradox. The most noted authors were not management authors but... critical philosophers like Baudrillard, Bourdieu, Derrida, Lyotard and Foucault which are also known as constituting what has come to fall under the general denomination of "French Theory". Their impact was especially visible in fields of Marketing where the notion of post-modernism flourished as is shown for instance by the development of the Review "Consumer, Market and Culture," and in the field of accounting where historical and sociological approaches in terms of episteme, power, discipline and domination led to the development of the Review "Accounting, Organization and Culture".

Such a situation does not come as a surprise for those who are accustomed to associate France with Cartesianism, an approach which is supposed to give a central role to philosophy, while the United States which is the land where Management studies flourished first as a full fledged academic field of research is commonly associated with Pragmatism, which is precisely the name of one of its most important schools of thought. While there is some truth to this opposition its actual impact cannot be well understood without devoting some attention to the historical background of the development of French academic life and its consequences on the development of management studies.

MANAGEMENT AS A LEGITIMATE ACADEMIC FIELD

Three characteristics of French intellectual tradition played a determinant role in the development of business studies: the reluctance of University to consider

technical fields of study, such as engineering and management, as deserving to be dealt with as legitimate academic fields of study; the institutional domination of the State and public institutions over private sector's activities and, finally the specific status granted to mathematics in the realm of scientific knowledge.

In France, technical fields of knowledge had to be developed outside the universities that rejected them: this is the origin of the dual French system of higher education which opposed Universities devoted to the development of legitimate fields of knowledge and *Grandes Ecoles* developed to serve the needs of State administrations and businesses. Given the dominant role of the State, the first *Grandes Ecoles* to be developed for the most part at the end of the 18th century were engineering schools established to provide for the technical needs of public administrations (*Ecole des Ponts et Chaussées*, *Ecole des Mines*, *Ecole Polytechnique* etc.). As was to be expected mathematics tended to play a major role in the pedagogy of these schools. Given the domination of the public sector, Business schools (*Grandes Ecoles de Commerce*) developed, for the most part, at the end of the 19th century, under the authority and the initiative of Chambers of Commerce of Paris. They tended to enjoy at that time a lower status than the more scientifically oriented engineering schools.

These specificities in the development of French technical schools allow us to understand the major traits of the contribution of French academic institutions to the development of the foundations of managerial knowledge. It should come as no surprise that the first major contribution of French *Grandes Ecoles* to Managerial thinking should come under the form of the foundation at the beginning of the 19th Century of an epistemological paradigm, classical positivism, by Auguste Comte who had been a pupil and later a lecturer in mathematics at the *Ecole Polytechnique*.

At the turn of the 20th century, France was a country where management issues and research could easily flourish. The early development of *Grandes Ecoles* in Engineering and later in Business ("Commerce") produced an elite of professionals that had to cope with the new organizational and administrative needs of emerging industries and trades. Even if most of these elites were not academics, some of them became conscious that the traditional knowledge coming from political economy, laws of commerce and craft-based work was not appropriate to the new industrial world. The prominent figure of Henri Fayol, a pupil of the *Ecole des Mines de Saint Etienne*, is typical of these new elites. After an outstanding career as an engineer, a scientist and a top manager, he formulated his well known "Administrative principles" during the same years that witnessed the formation of Taylor's "scientific management" in America. These new principles were not seen as mere practical wisdom and Fayol directed the birth of a new "Administrative Science" that encompassed all the challenges created by the rise of "modern corporations".

Circa 1920, the Fayolian doctrine became the subject of some lectures in Grandes Ecoles de Commerce especially through the course developed at the Ecole des Hautes Etudes Commerciales (HEC) by his director of commerce Carlioz who wrote several books on the commercial function, while the “Taylor system” was taught in engineering schools. But these teaching had no place in the standard tradition of scholarly knowledge, and were hardly seen as constitutive of a new science.

During the fifties and the sixties, French Universities engaged in several reforms. Management as a special topic was introduced in the faculties of Law but only as business information for lawyers. While pioneering universities created special institutes for Administrative studies (which gave birth to the present network of Institut d’Administration des entreprises). However, it is only in the mid sixties, and even more radically after the “May 68” movement that the academic status of management came to be fully recognized. As is fit in the French context it is from the State that three major initiatives had to come.

First a special foundation was created (FNEGE, Fondation Nationale pour l’Enseignement de la Gestion) which helped some of their best students to apply for a Phd in American universities US. This led to an interesting system of two-way stream of intellectual exchange between France and America: while these students formed a new generation of professors that, for the most part, tended to import from the US mainstream syllabi and research traditions, French Theory was attracting a growing attention from various sectors of American academia, including, in the eighties, business school especially under the label of postmodernism..

A second initiative was the foundation, in the aftermath of the May 68 student revolt, within the system of national superior education, of the first University explicitly devoted to Business studies (Université de Paris Dauphine)

Finally it can be said that, from the point of view of French academic institutions, complete recognition of management as a fully legitimate field of study in its own merit, occurred with the creation in 1976 of the Agrégation de Sciences de Gestion which allowed University professors in Management to be recruited along the same methods leading to the same status as professors of Law and of Economics.

AN INTENSE EPISTEMOLOGICAL DEBATE

Most of these developments were undertaken independently from older management curricula in Grandes Ecoles. The latter had a long legacy in management but they had been developing the field in a specific and autonomous way. They responded to their own needs which were to maintain high professional training by *continuously and critically* developing management methods and thinking.

To achieve such a demanding goal, they relied on large and active networks of former students who were often top managers. The main criteria for relevant management knowledge was the ability to train and convince a professional elite that had been intensively trained in mathematics to approach management science as an alternative to standard economics which had little direct value for real managerial situations. They adopted the “*action oriented*” and *situated* perspective advocated by early Operations Research movements and they taught general management issues as a vehicle for increased reflection about the role of managers and experts in organizations. This perspective favored a *critical view* of the new born mainstream management thinking. Standard research appeared too universalistic, too scholastic and without actionable value for future managers. This critical perspective explains the constitution of an active epistemological debate about Management in the French context.

In the middle of the eighties, the French landscape of Management research began to evolve. *Renewal trends* came from teams and networks that launched new exchanges and cooperation between management universities and Grandes Ecoles. Not surprisingly, one of the favored areas of investigation and debate was *the controversial epistemology and methodology of management science*. Grandes Ecoles teams had to clarify the academic value of their focus on relevant and actionable knowledge. University teams had to show the benefits of existing academic research in management. Both had to discuss the scientific domain and content of management research. The National Foundation for Management education (FNEGE) played a major role by supporting annual workshops on epistemological issues where doctoral students and lecturers could meet a variety of senior researchers and discuss such “hard” issues. Several books, like this one, came out from these encounters (Martinet 1988; Thiétart 2001; David, Hatchuel et Laufer (2001); Martinet et al. (2007)). They still have no direct equivalents in the international literature.

These books discussed different broad perspectives for management Science. They addressed questions like: What is the object of management research? What is a managerial situation? Is management science a social science? An engineering Science? A new basic field? What is involved in testing a management theory? How can we define rigor without relevance? In spite of conflicting positions, most authors shared the idea that management science was a young discipline and that there were various “good ways” to do research in Management. Accepted internal diversity and open critical debates were the condition of the *institutional unity of the field*. It contributed to its academic legitimacy in relation to older established disciplines like economics and sociology. Moreover, the link between research and practice, “the translation problem” or “relevance gap” as signaled in the international literature, was progressively perceived as a consequence of missing efforts to clarify the *scientific identity, history and phenomenological object of the field*.

The birth of the present book can be precisely established: March 1998. A small group of researchers from three institutions¹ had planned a workshop to discuss “unifying concepts for the foundations of Management Science”. The announced goal was to synthesize the epistemological work that had been done in several teams in France. Participation of no more than 20 to 25 “specialists” of the subject was expected. But rapidly the organizers were overwhelmed by requests from hundreds of academics who desired to attend the workshop. Finally more than 250 persons actually attended what became a large conference, with scholars from almost all the management teams in the country. This was a clear sign of the importance of the critical and renewal efforts that were expected and anticipated by a majority of academics. Eight presentations given at the workshop were published and formed the present book which is now widely referenced by French management students and researchers.

The present translation appears almost 11 years after the first publication in French. Very limited updating of the papers had been done. Editors have thought that the passing of time, as well as the advancement of research, have not altered the validity of the propositions presented in this book. During these same years, the crisis of standard management research has not vanished. In many cases, it is deeper and calls more than ever for diverse and fresh answers. Readers will judge if this book offers valuable elements that can serve as new foundations for the field.

*Albert David,
Armand Hatchuel
Romain Laufer*

Paris, March 2012

¹ Armand Hatchuel (Ecole des Mines), Albert David (University of Dauphine), Romain Laufer (HEC)

General introduction

MANAGEMENT SCIENCES AND SOCIAL SCIENCES: A LACK OF IDENTITY

The management sciences are the youngest of the social sciences, at least in terms of their academic history. Today, nobody doubts their practical and professional legitimacy. In the last twenty years or so they have also benefited from the recognition that the “firm” has a central role in society, whatever judgement may be passed on certain of its practices. In addition, « management » issues have undoubtedly become very popular, although this popularity has gone hand in hand with the misunderstandings, false debates and caricatures inherent to all intensive media coverage. Despite this success, the management sciences still lack clear expression in scientific terms. In an area where evolution is long and complex, they are still suffering from a lack of identity: they must show that they have their own distinct object.

Today, the management sciences discipline is split in many different ways and is still seeking its overall coherence. Fragmentation has led to a wealth of specialised work, but has made it difficult to build up the arguments and counter-arguments that stimulate scientific communities when they are working within a federating field of study. Various factors served as useful common references for a time, such as a pragmatic view of the firm or of organisations, the concern for appropriate instrumentation or the use of empirical studies, but a federating field of study still needs to be agreed on because such a large number of concepts, axioms and analytical frameworks have been drawn up in the course of the history of the management sciences.

Above all, the lack of a federating field of study makes the management sciences extremely porous. It has repeatedly been observed that the discipline of management often borrows from other disciplines. This is not a bad thing in itself, and could even be seen as a sign of openness and good health. Nonetheless, it suffers too often from the other social sciences’ quarrels, fads or renunciations, without being able to question them on the basis of its own specific criteria for judging their scientific nature or pertinence. It is hesitant to propose its theories to other disciplines as it lacks a clear position on the foundations of its own views, and is sometimes condemned to seeing its own results rediscovered or used without the benefit of hindsight.

However, the problems of fragmentation and porosity can now be reviewed and challenged in the light of the new constituent principles that several research movements are proposing today. Ten years ago, a collection of work under the direction of Alain Charles Martinet observed this fragmentation and demanded that epistemological thinking should be placed at the centre of the management

sciences. This book takes up the thread of this thinking, and wishes to demonstrate that a decisive step has been made: the epistemological debate is giving way to a time for discovery, proposals and, perhaps, the building of new foundations.

NEW FEDERATING FOUNDATIONS

The aim of this book, and indeed the challenge involved, is to demonstrate this fundamental progress. In spite of the diversity of the approaches presented, they all endeavour to isolate new objects and central foundations for the management sciences. It should be noted that theoretical and conceptual work of this nature consolidates the professional and praxeological project that gave birth to the management sciences, and which remains at the heart of its social legitimacy. It is now supported by more radical and more innovative fundamental research.

A new, better-defined scientific identity emerges from the different contributions to this book:

- Management sciences are no longer thought of as a simple collection of heterogeneous, specialised instruments.
- They go beyond the traditional representation with its juxtaposition of successive, watertight schools: traditional school, human relations school, contingency school, political school, cultural school, etc.
- They avoid the methodological quarrels that contrasted qualitative approach and quantitative approach for too long.

Researchers in the management sciences are well aware that the unity that was so difficult to perceive in the past now relies on their capacity to recognise the original, unexpected nature of the results obtained from recent work.

The management sciences have indeed come to a point that could not be clearly imagined at the outset: a science whose object is neither a type of organisation, nor a type of phenomenon, nor a series of facts, but rather, a class of issues that constitute all collective action: decision-making, rationalisation, representation, legitimacy, co-operation, prescription, etc., issues without which we are incapable of thinking up, and therefore carrying out, any means of « acting together ». For too long, the apparent universality of these issues masked the need to renew the answers that had been given to them over the years. The management sciences are therefore attempting to create or reinvent these issues. The object of its research is not, in the end, limited to applied sociology or to applied economics, even though these disciplines may focus their interests on firms and on organisation.

Having adopted a more universal object, the management sciences are different from the other social sciences in that they do not postulate the existence of social facts or economic facts. They consider that what is called « social » or « economic » at a point in time, is the result of contingent solutions that have been given to more fundamental questions, respectively, the construction of viable

processes for belonging, for knowledge or for exchange. This position helps understand the historical transformations undergone by the notions of « social » or « economic », which are still too often thought to be obvious, intangible and distinct. The renewal of management concepts and knowledge makes a direct contribution to remodelling their content and their boundaries. What would economic or social policy be without accounting theory? What would the social division of labour be without an instrumentalised concept of « plan », « strategy » or « control »? What would the economic concepts of profit or earning capacity be without the know-how of industrial management, which serves to define and evaluate them? What would economic exchange be without the rhetoric and specific mechanisms of trade? The management sciences are therefore inevitably sciences for collectives that are capable of transforming themselves, and which think this transformation can only be undergone by acquiring new knowledge and implementing new means of action.

By more clearly identifying the federating concepts of the management sciences, current research work extends their scope and impact beyond the usual field of management. It puts light on theoretical questions that cross all the social sciences; the links to economic and sociological research can gain from this in clarity and balance. However, this increased universality and scope also has an impact on the management sciences. The new scientific identity emerging from the works presented here redraws the very notion of « management ». We know that progress in physics led to the former representations of « matter » being abandoned in favour of the notions of « energy » and « field ». We should therefore accept that the more systematic, unified construction of the management sciences is likely to produce changes in the notion of « management ». Several of the chapters presented here outline such prospects.

BEYOND MANAGEMENT... THE NEW TERRITORIES OF THE MANAGEMENT SCIENCES

In the first chapter of this book, Armand Hatchuel begins by taking a look at the remarkable history of the management sciences. Created at the beginning of the 20th century as an educational project for company managers, they only very recently started to elaborate an independent, universal scientific project. But what can the fundamental propositions of such a project be? First, Armand Hatchuel insists on the specific characteristics of the firm described as a non-transcendental, « artefactual » collective. According to him, the history of such collectives leads to a fundamental distinction, separating metaphysics of collective action from the axiomatic or genealogical theories of collective action. Metaphysics of action are essential to collectives that believe themselves to be eternal and natural, or are based on principles that they believe to be eternal (there are metaphysics of profit, just as there are metaphysics of the family). On the

other hand, firms only survive because they are capable (voluntarily or through necessity) of renewing their principles of management, and thereby of calling into question any metaphysics of action. Hence, they do not have a « natural state ». The elaboration of axiomatic and genealogical theories of collective action appears to Armand Hatchuel to be the best prospect for the management sciences. He presents two series of research results in support of this project. First, he shows that the « collective learning » concept, that was at the heart of the most important management research movements in the last twenty years, is based on a genealogical conception of rationality, of organisations and efficiency criteria. He then goes on to isolate the fundamental « operators » in collective action (that of « knowledge » and « relation »); he then states the fundamental principle of the « non separability of knowledge and relations » as an invariable constituent of collective action. On the strength of this, he goes on to show that the management sciences implicitly used this principle in their criticism of the concepts of « hierarchy », « profit », « expertise » and « plan ». He also uses this principle as a basis for the notions of « relations of prescription » and « rational myths », that he considers essential to a management theory for collective action. Hence, he proposes a universal, independent theoretical project, also designed to be in tune with our particular point in history when all the previous forms of enterprise, knowledge, communication and performance are undergoing drastic change. The project also finds forgotten roots in the Roman etymology of the French word for management, « gestion ».

Based on an institutional stance, Romain Laufer places the object of management in its relationship to systems of legitimacy and their crises. In chapter 2, he defends the hypothesis that there are no longer any systems of legitimacy that are not in themselves management systems; historically, firms generated specific administrative language designed to legitimise managerial views and action. To support his view, Romain Laufer therefore reviews the syntax of collective action. However, management is in a constant process of legitimisation; when there is a durable crisis of legitimacy, collective action is always coupled with a rhetorical project, corresponding exactly to the scope of what is manageable. Legitimising therefore means simultaneously building objects and collectives; managing means inventing new systems of legitimacy: it is as if legitimacy is now the result of a management system capable of building collective objects and collective agreements at the same time. It is therefore interesting to see exactly what relationship management has with the ancient discipline of Rhetoric, the aim of which was to construct systems of argumentation designed to persuade and convince others. Is Rhetoric a discipline that dilutes and melts into management science, or is management science, in essence, the child of Rhetoric. Romain Laufer re-opens this debate in chapter 7, by demonstrating in the special case of marketing how and why ancient and modern Rhetoric can also serve as a paradigm for the study of management.

For the management sciences to develop an axiomatic, reflexive theory of collective action, which avoids the pitfalls of metaphysics of action, a radical change is required in the methodological principles of research. In chapter 3, Albert David goes back to three traditional working hypotheses: the primacy of hypothetical-deductive reasoning in the creation of scientific knowledge, the possibility of co-existence between a positivist vision and a constructivist vision in the management sciences, and the need to fragment the methodologies used in the management sciences. If we consider that the management sciences are a science of the artificial and closer to engineering than to description or to pure modelling, then design becomes the reference methodological and epistemological paradigm. A recursive abduction-deduction-induction loop should therefore be considered globally, in the generation of scientific knowledge, enabling us to go beyond the traditional opposition between the inductive approach and the hypothetical-deductive approach. We must also go beyond the opposition between positivism and constructivism and put an end to certain confusions, such as those resulting from misleading associations between positivism and quantitative methods or, symmetrically, between constructivism and qualitative methods. We can then explore the different implications of a constructivist conception in the management sciences. Finally, as the methodologies used are extremely varied and often seen as being in competition with one another or antinomic, here too we must go beyond such oppositions and integrate the different approaches within a single analytical framework. These hypotheses lead Albert David to the conclusion that the management sciences require an epistemological and methodological framework that generalises the more restrictive formulations used in a certain number of other scientific fields.

Alain Martinet continues our critical, reconstructive analysis with the case of strategy. In this field, how can we build up valuable scientific knowledge that also has an operational vocation? From the outset, strategy was one of the management science disciplines that claimed a praxeological objective and a will to federate, so what is required by strategy research today will also be required by the management sciences in general. Taking up the white stick again means returning to the field, whilst also adopting a holistic approach based on « un-discipline ». Alain Martinet goes beyond the static typologies and the analytical instrumental approaches based on a few of the main tools used in strategy. He proposes a framework that includes five fundamental types of logic: teleo-logy (conception of trajectories, positions and decisions to be made), eco-logy (study of market determinism), socio-logy (strategy-building process, seen from the players standpoint), techno-logy (resources, skills, know-how, technical property, learning), noo-logy (strategy viewed as a presentation, with underlying representations for bringing into action). Strategic understanding of a particular situation brings the five logics into play, to varying degrees, and researchers must not forget that strategy research must ultimately serve decision aiding. It is therefore difficult to be satisfied with importing and

exporting notions and concepts, particularly as simply linking together different elements of pre-packaged knowledge puts an end to having anything to export - a paradox in a world where, as we have seen in chapters 1 and 2, everything is « management »-oriented. It is therefore more important than ever to have recourse to the field. But not any field: company management increasingly see its role as that of new product designer. Hence, strategy in turn becomes engineering, and the strategist a designer-systems manager, guaranteeing more creative, less mechanical conception of action.

In chapter 5, Jacques Girin looks in more detail at these problems of importing concepts, based on the example of complexity. Under what circumstances can polysemic concepts such as complexity be usefully imported and used in the management sciences? For instance, is it the case when it comes to borrowing a ready-to-use concept « off the shelf »? If it is not the case, which principles, standpoints or doctrines can be used to put the notion into perspective and really translate it? If this translation merely consists in a misuse or even a deceptive use of a concept whose role is limited to a superficial metaphor, the researcher is merely helping to make new metaphysics of action as defined by Armand Hatchuel in chapter 1. We could even interpret the management sciences' ability to mobilise a hard core and launch a debate to really « explode » and dissolve such concepts as a sign of its epistemological and theoretical maturity.

Instead of using the traditional management science disciplines as a starting point and extracting a shared definition of decision aiding, Bernard ROY undertakes a methodical change of perspective in chapter 6, going back cautiously over the elementary operations used in constructing the notion of decision aiding. He definitely leaves behind the idea of a science of decision-making in favour of the more modest, but more sophisticated paradigm of decision aiding. He demonstrates that if decision aiding is neither a description nor an arithmomorphism, and if therefore, it also wishes to avoid the pitfalls of metaphysics of action, it can only be an anatomy of the language of deliberative rationality in its purest form. It is in this conceptual framework that we must first understand the necessary return to the apparently (and deceptively) elementary notions of the concepts proposed in this chapter. A fundamental, forgotten truth emerges from this analysis: decision aiding is often considered as dependent on a context of action, whereas in fact, by its conceptual asceticism, it also produces contexts: it does not find the action as a natural deliberative space, but on the contrary, creates the conditions required for such a deliberative space. It is in this sense that decision aiding, in the perspective presented by Bernard ROY, also participates in the universality of the management sciences.

Finally, in chapter 8, Albert DAVID, returns to the methodologies of intervention and research in the management sciences. The main hypothesis supported in this chapter is that « intervention-research » offers a methodological framework in which management engineering can be part of the management sciences'

fundamental project. In the management sciences, scientific results are always subject to “tension” with reference to real or virtual action projects. Four approaches to intervention are explored to back up this analysis (action-research, action science, science of decision aiding and intervention-research). They all seek to participate in the conception and implementation of creative, emancipatory collective trajectories. Albert DAVID demonstrates that « intervention-research », in its widest sense, can be a generalisation of the different approaches to research in the management sciences. This observation can be interpreted as proof of consistency.

Whilst the management sciences have become part of a fundamental, universal research project, leading to a critical, inventive vision of collective action, it is reassuring that the researchers’ methodologies are coherent with the project in question. When the experimental method established its superiority in the sciences of the « matter », it was certainly vital that it did not implicitly restrict future conceptions of what we call « matter ».

New horizons for the management sciences? Towards a theory of collective action

Armand HATCHUEL

Nature shows no action
J.W. MILLER

Although the management sciences are inseparable from the history of firms, it took a long time before the universality of their message was recognised¹. In this chapter, we will attempt to clarify the foundations of these disciplines and their future prospects, by going back to the historical and scientific singularities of their development. We will see that the history of the management sciences can be described as the gradual move from an educational project to an original scientific project searching for consolidation and unification. In the light of current research, this project can now be given a better grounding and a more rigorous specification. We will demonstrate that the management sciences' object is an axiomatic, genealogical theory of collective action; a theory for which the fundamental concepts, invariant propositions and originality can be specified in the field of the social sciences. This point of view has several important consequences, which we will develop in this chapter:

- A reversal of the usual definition of the management sciences: this encourages us to put aside the image of the management sciences as a multi-disciplinary cross-roads or as a field of application for the older social sciences. We will show that, after a difficult but original history, the management sciences have emerged as a fundamental scientific field whose development can be of benefit to all the social sciences.
- A widening of their scientific scope: we will see that rethought in this way, the management sciences contribute to a more general scientific transition, that moves from "metaphysics of action" to axiomatic theories of collective action. By "metaphysics of action" we mean the theories that summarise collective action either as a totalising principle (e.g. profit or strategy), or as the action of a totalising subject (e.g. "the manager", "the expert", or a particular group). The need for this type of transition is also felt in the

¹ The management sciences were not mentioned at all in a 1986 report on "the state of the social sciences in France" (Guillaume, 1986).

other social sciences and in the contemporary philosophical movements, as demonstrated by an increasing use of references to the notion of action.

- A new view of the nature of the “firm”: the management sciences can contribute to cross-disciplinary change in the social sciences because the “firm” that was for a time their main object is one of the least natural and the most abstract forms of collective life. In firms, more than anywhere else, survival depends on the renewal of doctrines and techniques, but even more so on the understanding of the special role of doctrines and techniques in collective action.
- An original axiomatization of collective action: beyond the theory of the firm², we will maintain that the object of the management sciences is a theory of collective action that does not limit the latter to totalising knowledge (utilitarianism) or to a totalising relationship (sociologism). On the contrary, a theory of this sort depends on a “principle of the non-separability of knowledge and relations” which is its central invariant. The principle does not “totalise” collective action, nor does it determine it. It highlights a vital condition of its existence, and provides a criterion for inconsistency.

Two results can be expected from this progress. First, *a better understanding of the genealogy of the different forms of collective action*; second, support for the *invention of forms of collective actions, including entrepreneurial ones*, designed to satisfy the emancipating values of our time.

1. THE MANAGEMENT SCIENCES: FROM EDUCATIONAL PROJECT TO SCIENTIFIC PROJECT

Although they can claim a very ancient genealogy, the management sciences were still struggling to exist in the latter years of the 19th century (Bouilloud and Ecuyer, 1994). They became more visible with the development of Taylorism and Fayolism and began at that stage to make specific doctrinal claims. The two authors developed and refined the ancient lessons on production and the division of labour, found in political or industrial economic treatises since Adam Smith and Charles Babbage: the entrepreneur’s behaviour no longer summed up the life of the firm, and the organisation of labour was no longer limited to simply hiring a workforce. However, Taylor and Fayol were industrialists and their works contain nothing to suggest that they should be classified with the philosophies or sciences of their time. Their writings were destined for their peers, entrepreneurs like themselves. Neither of these authors pursued an academic career and their lives were far removed from those of Adam Smith, Emile Durkheim and the like.

Why were new horizons opened up by men of experience and not by scientists? The question is still to be studied, but however enlightening such an investigation

² For memory, the management sciences consider that a “good” theory of the firm must be a theory of forms of action that are pertinent in the firm.

might be, it would change nothing in the fact that these doctrines were received as a basis for a new educational project designed for factory owners and businessmen; and as the means of a true *initiation* into organisation and the life of firms. Hence, the path that would later lead from the initiation of company managers to a universal programme of knowledge was not in the least bit natural and developments only arose very gradually, as we will now see.

a) The stages of an original development³

1. 1900-1939: an educational, initiatory project

To help understand the direction taken by the first management teachings, we will mention two major texts from this time. Published with an interval of several years, they both deal with the culture required by company managers. Their approaches differ widely, but they both express the same conviction: at the turn of the 20th century, new doctrines and new realities meant that the ancient figures of “the entrepreneur” and “the employer” needed to be redefined.

The first of the two texts was written by Pierre Pezeu, a former officer who became an engineer and company owner. His work, *Les hommes qu'il nous faut*, (the men we need) was published in 1918 in the form of a series of articles in the *Revue de mécanique*, directed by Henry Le Châtelier. Following the example of the latter, the author began by claiming his support for the new Taylorian trend: “Taylor has shown what the art of being a manager consists in: knowing what is required and knowing how to get it done by qualified employees”. But he wished to add to the principles of scientific organisation by reflecting on the art of command and of managing men. Typical of its time, Pezeu’s text combines the new doctrines of the organisation with the moral code of the “virtuous manager”. These ancient, timeless morals often led him to earnest exhortations:

“To lead men, one must act firmly, but this firmness must be marked by kindness and ruled by tact” and “He (the owner-manager) must like his men and be attached to them; [...] He does not belong to himself; he belongs to the personnel who devote the best of their lives to him and who must be able to count on him”.

The tone had changed in 1933, when Pierre Jolly published *L'éducation du chef d'entreprise*⁴. (Educating company managers). He took up the same question as Pezeu, but this time the educational aim was no longer a moral code for owner-managers. The idea was to make management practices more professional.

“Similarly, would it not be a good idea to spare the people who are destined for business, who have a legitimate ambition to fulfil management functions, from moving rapidly, with no transition whatsoever, from theory to practice, and from having to go through a more or less long period of sometimes difficult adaptation,

³ We have limited the following summary to the French context but if we take different periods into account it should be possible to show that the same stages can be found in other countries.

⁴ Jolly P. (1933). *L'éducation du chef d'entreprise*, Librairie de l'enseignement technique Léon Eyrolles, Paris