

## Ethics in Social Networking and Business 1

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# **Ethics in Social Networking and Business 1**

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*Theory, Practice and Current  
Recommendations*

Pierre Massotte

**ISTE**

**WILEY**

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## Foreword

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Humanity, which as a topic is so difficult to define, is a creation of everyday life, of which we are not always sufficiently and consciously aware. Yes, it involves all of us collectively, but especially every one of us individually. This global community is the fundamental issue that must gather all men and women in a single worldwide project because it is a referral for unity and inclusivity.

It is naive to try to make us believe in the immediate feasibility and unimpeded achievement of such ambition. The contribution of Humanity is also the result of advanced progress: that of the sciences, whether physical or mathematical, natural or environmental, technological or philosophical.

This last philosophical dimension confronts us with deep thinking: it is an invitation to give a meaning to the progress of technology, that only morality and ethics can bring.

There is no greater task than trying to confront human beings with themselves. Although human nature has always been invited by man and science to progress, it is clear that evolution has not systematically followed natural courses, which in any case are harmonious and inclusive. The risk that humanity runs is that of perverting itself in a vision that goes beyond the highest interest of the community, to serve only that of individual destinies. Subjugation emerges under this condition.

The principles of good ethical conduct depend on postures which do not appear to be simply “spontaneous” and which call for a real awareness of the actions generated and the indirect consequences resulting from them.

We are therefore dealing with the question of what can constitute intangible principles related to the matter of foundations in morality: this is a means of having a strong source of inspiration and reference values.

It is therefore natural that Pierre Massotte invites each of us to discover the Ethics of Responsibility, outlined in the essential registries of good conduct of people in the world of business. Therefore, we have a code of conduct that crosschecks and merges all the implications of human beings in their relationships within a global societal framework.

There is certainly a difficulty in formalizing a modeling framework in this subject matter. Indeed, forging vital reference values naturally leads to creating and defining the conditions for the necessary in-depth elaboration, before a given action, of the elements that will be used in different inherited situations. It provides an inspiration based on the values of virtue, coming to question societal relationships, either socially or business oriented. Finally, they form only one whole, as soon the implied behavior of anybody, at this level of involvement, is to be virtuous.

It is not by chance that many of the references quoted in this book come from large companies or social organizations across many fields. Among the organizations, the Rotary plays an important role that cannot be ignored because, for more than a century, it has created the conditions for a global involvement in ethics, to provide an active contribution to working towards peace, and therefore working for humanity as a whole.

Through its programs, and its members’ requests for impartiality and integrity, both on a personal and vocational level, the Rotary calls on its members to adopt an ethical conduct in all of their actions. The goal is thus to set up a reference framework with which to bring together or interconnect people, in order to lead a noble novation. There is a distinction to be made between what makes cohesion possible and what enables the resilience of this cohesion. The humanitarian challenge is thus converging toward the principle of necessity in ethics.

The Rotary's four-way test urges its members (Rotarians) to ask themselves the following questions before making a decision and putting it into action:

- Is it the truth?
- Is it fair to all concerned?
- Will it build goodwill and better friendships?
- Will it be beneficial to all concerned?

It is not enough to be convinced in order to assert an ethical posture. Each of us must be responsible for this, which inevitably refers to the question of “public affairs”, in the sense in which the Romans understood it; that is to say, in the so-called *res-publica*, which corresponds much more to the common domain of the society rather than the public domain.

This is the strength of Pierre Massotte's invitation in this book, for which he did me the honor of writing this foreword. The best intent is to serve the development thus produced at the level of humanity, convincing us that this development is an incentive to go even further.

The acceleration of time we are currently experiencing, due to the arrival of new information and communication technologies, gives an even greater dimension to this issue. We must continue believing that it is sometimes necessary and important to take a break and make time for a period of thought and analysis.

Thus, it is up to us to answer and live up to this invitation, and to make the aspirations and dreams which arise from this more real, in order to make Ethics a good deal, but above all an ambition to be shared and realized.

Régis ALLARD  
Past Governor D1780  
Rotary International President's Representative  
President of *leRotarien* magazine

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## List of Acronyms

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AHT:	Average Handle Time
AI:	Artificial Intelligence
ANN:	Artificial Neural Networks
ANS:	Autonomic Nervous System
B2C:	Business To Consumer
BDA:	<i>Banque du Developpement Africain</i> (African Development Bank)
BDI:	Beliefs Desire and Intentions
BE:	Business Ethics
BECC:	Business Ethics Code of Conduct
CBR:	Case-based Reasoning
CJD:	<i>Centre des Jeunes Dirigeants</i> (Young Leaders' Center)
CNN:	Convolutional Neural Networks
CNS:	Central Nervous System
CSCL:	Computer-Supported Collaborative Learning

CSCW:	Computer-Supported Cooperative Work
CSP:	Constraint Solving Program
CSR:	Corporate Social Responsibility
DQN:	Deep Q Network
DNA:	Deoxyribo-Nucleic Acid
DSS:	Decision Support Systems
DTI:	Diffusion Tensor Imaging
EMA:	Ecole des Mines d'Alès
ENS:	Enteric Nervous System
EOC:	Entrepreneurial Organizational Culture
GA:	Genetic Algorithms
GEEK:	Expert or enthusiast, turned inward, poorly socialized, living in their own head, passionate about computers or cyberspace (from german <i>Geck</i> , or fool)
GIG:	Freelance Economy and Uber way of Life
GMO:	Genetically Modified Organisms
GPU:	Graphic Processing Unit
HACCP:	Hazard Analysis Critical Control Point
HRM:	Human Resource Management
ICT:	Information and Communication Technologies
IOE:	Internet of Everything
IOT:	Internet of Things



IPCC:	Intergovernmental Panel on Climate Change
IT:	Information Technology
LAR:	Lethal Autonomous Robots
LAW:	Lethal Autonomous Weapons
MAS:	Multi-agent Systems
MFG:	Mean Field Games
MID:	Mobile Internet Device
MMS:	Multimedia Messaging Service
MRI:	Magnetic Resonance Imaging
NGO:	Non-Governmental Organization
NLDS:	NonLinear Dynamic Systems
OR:	Operations Research
P2P:	Peer to Peer
PC:	Personal Computer
PLC:	Product Lifecycle
PLM:	Product Lifecycle Management
PLOOT:	Plant Layout Optimization
PPC:	Pay per Call
PPT:	Pay per Time
RFID:	Radio Frequency Identification
R&D:	Research and Development

ROE:	Return On Equity
ROI:	Return on Investment
RYLA:	Rotary Youth Leadership Award
SIC:	Sensitivity to Initial Conditions
SLA	Service Level Agent
SMS:	Short Message Service
SOHO:	Small Office, Home Office
TQM:	Total Quality Management
VFDCS:	Virtual Factory Distributed Control System
VPN:	Virtual Private Networks
WAN:	Wide Area Network
WIP:	Work in Process
WTO:	World Trade Organization
WTS:	Web to Store
WTVS:	Web to Virtual Store
WWW:	World Wide Web

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## Introduction

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The world is continuously changing. This is a common assertion. However, the present change corresponds to an in-depth evolution of society. These are not simple crises or disturbances against which we can fight by implementing increased measures of control and regulation. This is a profound change [MAS 08] whose crises are only a superficial manifestation. The action of a government or state alone is not enough.

Indeed, if it is a change of economic balance or civilization, with a gradual shift in power or influence from one continent to another, there will be a tremendous impact on the economy, culture, societal practices and politics. We can refer to the history of previous civilizations to analyze their life and evolution, to observe how this occurred in the past and to see how societal adaptation problems were associated with such events.

Even if it is simply a small drift or deviance of our society, the problem remains the same. However, as populations are subject to dynamic nonlinear phenomena, we cannot predict what the evolution of a society will be, and it is this which current governments across the global are not in a position to control.

In either case, what can we do? The world is made up of countries, or federations of countries, that will mobilize the best and adapt as quickly as possible to new challenges, and that will take advantage of the changes. What is important is that when a change in equilibrium occurs, even if we do not know the outcome, we must try to create as little injustice as possible and attempt to continue preserving global interests.

As President Kennedy once said: “Ask not what your country can do for you, ask what you can do for your country”. In other words, the important thing is not to know that something is going wrong and to ask what the government can do. The important thing is to know what each one can do for the Nation to help solving a problem.

It is through the participation of all of us in society, from the highest people in the hierarchy to the humblest of citizens, that a solution can emerge.

It is within this framework that members of the Rotary Club, and also non-Rotarians, can mobilize ourselves to try to participate in this global action. We can all help to bring our stone to a building, since as always happens in the evolution in nature (also, this fulfill the requirements for a wider diversity): there are turbulences brought by disturbances and counter-flows: that is to say, sets of actions and thoughts whose interests are not always clearly pre-defined, but going one way, especially nowadays with this powerful and unifying tool that is the Internet.

## **1.1. The loss of ethical values in the professional world**

Before defining the term “ethics”, we have to recall the basic foundations of our current socio-economic system. The economic structure of the Western world took its roots in two main founding events: the development of the free-trade in the 18th Century and the birth of the industrial capitalism in the 19th Century.

For reasons which we will not explain in this book, these economic changes had a direct and strong impact in the professional world, the objective being to produce more and more products and services, and to gain more and more wealth. The continuous improvement and the industrialization of factories enabled society to implement rational and effective ways of working, thereby generating a lot of adaptations and stresses at different levels of human resources (organization, operating procedures, skills, jobs, etc.). Simultaneously, the structure of society evolved and was deeply reshaped.

In France, for instance, the French revolution occurred in the 18th Century and fostered a societal change: this society was initially based on a “holy” type order structure (*clergé, noblesse, tiers-état*) and then moved toward a society based on wealth. At this time, the upper middle classes, with the so-called “burghers”, could develop their business in the commerce and finance, and reached a dominant position in society: the predominance does not come from the place and the importance of the birth, but it is associated with the ability to create important wealth and to manage financial flows.

As a result, we shifted from a centric world focused on moral and religious values to another centric world based on money.

## 1.2. The cult of value creation<sup>1</sup>

The importance of money characterizes the vocational world and our society. The changes in the professional world have therefore had a major impact on our society and our vision of the world. When money is the central point of the professional and working domain, it is one fact, but when it is interfering with all the Western cultures, it becomes a paradigm change. Indeed, profitability, value creation and growth, which are the major developments in our society, become ends in themselves: they obscure and mask some other less profitable and more humanistic considerations.

Wealth is therefore the backbone of the many current socio-economic systems. Competition is increasing, creating a world in which the winners are the ones who achieve the biggest gain, thus forgetting that what should “count” above all are ethical values. Some people would say that we are surrounded by prey–predator models: this is necessary, in nature, to generate diversity and for evolution of the species; however, as soon as the human species are involved in this mechanism, everybody is sensitized by the fact exclusivity, spirituality and other cognitive properties, specific to the human condition, are hurt and cannot be accepted.

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<sup>1</sup> The Knowledge Kiosk, August 2005 (<http://www.guichetdusavoir.org/ipb/index.php?showtopic=10928>); Le Journal du Net, March 2003 ([http://www.journaldunet.com/management/0404/040432\\_ethique.shtml](http://www.journaldunet.com/management/0404/040432_ethique.shtml)); Scandale.com, editorial of the World dated 4 March 2009.

### ***1.2.1. Forgetting the ethical values***

“Nowadays, people know the price of everything and the value of nothing” (Oscar Wilde). This transmits the fact that an out-and-out profitability has therefore led to forgetting of ethics in the world of labor.

To get more money, people sometimes do not hesitate to resort to unlawful or unenforceable means. When social recognition passes more through money than through virtue, every observation leads to the belief that enrichment and evolution of our society is associated with the impoverishment of part of the individual and their values.

Indeed, nowadays, some fundamental principles and values seem to have been left out. We then end up doing everything and anything as long as it is profitable; child labor, the devastation of rainforests and urban corruption are sad examples.

In addition, ethics is no longer a priority in some companies. We retreat behind the law with bad faith or unconsciousness. For many companies, only what is illegal is reprehensible, and some do not hesitate to take advantage of loopholes and exploit any legal weakness. Also, many SMEs, same as for the administration in a country, do not hesitate to hire and fire employees through temporary contracts, thanks to new legal rules and despite the social and financial situation of the worker. Here, unscrupulous small businesses take advantage of the trial period of the New Employment Contract to disguise CSDs and hire employees who think they are entering a sustainable position.

Thus, our society has become a society of laws and social images rather than a society of values in which we too easily forget the importance of tacit codes of conduct and practices of ethics: in our work and our current life, they have to guide our actions, choices and decision by respecting deep ethical values.

Has the blind search for profit made us lose our heads? In any case, we must rediscover or find the meaning of reality, beyond a simple economic pragmatism, and learn to reconsider the main notions of ethics. But, how to achieve ethics in business? To answer this question, we will recall some important factors in the following.

### I.3. The three competitiveness and sociability factors

We cannot say that failures and crises are not the result of lack of time or the presence of irreversible problems, but the result of either a lack of skills, ignorance or the greed of decision makers, of societal evolution [MAS 10a, MAS 10b] and of the selfishness of people. Hereafter, we will recall some definitions:

1) Skill is the ability to carry out a task with pre-determined results often within a given amount of time, using a limited amount of energy and resources. For instance, in vocational domains, some general skills would include time delays, management techniques, teamwork, leadership, etc., while in a technical area, domain-specific skills would be useful only for accomplishing a certain technologically elaborated job (e.g. electronics, design, masonry, bakery, information systems and medicine).

2) Ignorance is the lack of knowledge we have on a subject matter. The word *ignorant* is an adjective describing a person in the state of being unaware and is often (incorrectly) used to describe individuals who deliberately ignore or disregard important information or facts. For instance: politicians, some economists, etc. do not know that many things are depending on nonlinear dynamics. Under these conditions, no anticipation and prediction are possible. Ignorance must be distinguished from stupidity (also related to willfulness) and can lead to unwise or prophetic actions.

Here, an ethical attitude consists of (as recommended by Thomas Pynchon) defining the consistency level of his own “Ignorance”. It is not just a blank space on our mental map: ignorance can stifle learning, especially if the ignorant person believes that he is not ignorant. He will not seek out the clarification of his beliefs, because he is sure to be right, and will also accept or reject ( $\alpha$  or  $\beta$  risk) false or valid but contrary information, or decision, neither realizing its importance nor understanding it.

3) Greed is an inordinate or insatiable desire, especially for wealth, power or status, sex, food, etc. Consequently, a greedy attitude consists of a huge desire to acquire or possess more than one needs. Among the BDI concept used in AI, the desire is the strongest need perceived by a person, and may conduct him in excessive or tyrannical random decisions in various fields such as moral, social, political, vanity, burden, etc.

### ***1.3.1. Applications: greed deviances and the need for codes of ethics in business***

Our concern here is to tackle a situation that affects all of us, which stems from changes observed in a society requires moralization: in the economic field, our world is subject to an increasingly rapid pace of unforeseen events.

Without going into the details of their frequencies or amplitude, we can quote some recent examples:

- the economic crises that marked us: the oil crises of 1967 and 1973, the bursting of the Dot-Com bubble in 2000, the subprime crisis of 2008, and so on. Were they predictable?

- the administrative, political, economic and social common scandals associated with these crises abound. One question, however, arises: how can we prevent and monitor such behaviors?

These events are the expression in the open day of drifts, here above called “incompetence”, “ignorance”, “greed”, and also “amorality” ... not to say “immorality”. They generate decisions, and also behaviors that are found abnormal in the today’s world (while they were considered as acceptable, few years ago). By way of example:

- corruption is a global problem and originates from greed. For example, 5–45%: this is the share that bribes represent in the amount of a large international contract. For infrastructure projects alone, Kroll Consulting [FAB 98] estimates that bribes will amount to 70 billion euros (450 billion francs) over the next ten years;

- stock market practices relating to the right of purchasing shares of the company under preferential conditions;

- directors’ fees: this is a remuneration of the members of the board of directors of a company;

- cars and ranking privileges, used for purposes other than those related to the business;

- fictive/fictitious employment, and personal enrichment, which are accustomed to by many public persons;

- misappropriation of social aid and subsidies, misuse of public resources, estimated at several billion euros, following false declarations represents several percent of GDP;



– undeclared work, which represents between 10 and 25% of GDP in European countries, leads to inequalities in the financial contributions required to the populations: the middle classes are being the most affected (they are impoverished);

– the greed of some banks and financial institutions that launch sophisticated financial derivatives by focusing not only on an improvement of a situation, but also on the deterioration or degradation of the same situation;

– the wage differentials of some managers multiplied by 40 in 15 years, while that of other categories of employees remain stable or frozen for economic reasons;

– finally, referring to recent examples in politics and in affairs (regardless of party or country), one can only protest against the immoral excesses of the elected officials, executives or representatives who do not realize the “lag” of their actions, in relation to the realities and disarray of the citizens.

And so on.

### ***1.3.2. Skill and ignorance: the future context***

In the second volume of this handbook on ethics [MAS 17c], the I-economy (standing for Internet-economy) is discussed, which highlights new concepts including that of the “augmented human” possessing unusual capabilities, and able to fulfill new functionalities unpredictable few years before. What are the skills we need to plan for the future to be easily adaptive?

We can note that the “Future” will neither consists of a full automation nor in maintaining obsolete ways of working, but in ensuring the symbiosis between the human being and robotics.

More specifically, we will analyze advances in technologies, of which we are often unaware, that are able to develop our capabilities and functional alternatives as soon we are faced with some physical or intellectual disabilities. We will call that evolution: “transhumanism”. We have to focus, however, on one specific point: troubles and ignorance are about to disappear, since technologies are able to provide orthosis and prosthesis to a human being or to give information about our subjects of questioning (e.g. via Google). We have yet to highlight some of their impacts: for instance, through transhumanism, our weakness (in terms of freedom) and social exclusion will increase. This is not an ethical and advisable trend.

Moreover, since our way of life is developing faster and faster, we are more and more often faced with unexpected evolutions and context changes that we can neither anticipate nor quickly predict: we find ourselves becoming “ignorant” of these changes and the question is: how to monitor, control and handle our ignorance?

Within this framework, what is important in solving a problem is not to know what will happen in time, but rather to think about possible events associated with the required responses they engender, taking into account a global objective, rather than the satisfaction of some “happy few”. As follows an old adage: *“there are no right or wrong answers but, simply, correctly or incorrectly modeled problems”*.

We conclude by saying that failures and crises are not the result of lack of time or the presence of irreversible problems, but the result of either lack of skills, ignorance or the greed of decision makers and societal evolution [MAS 10a, MAS 10b].

It is therefore obvious that the presence of asymmetric information relates directly to the professional ethics of the leaders involved and can lead to a distortion of the decisions to be taken: sometimes called “anti-decisions”. Indeed, in a decision-making system, such as in risk management, it is possible for decisions to be made or for results to be obtained which are the opposite of those desired. It is said [LAF 02] that such a process is of type “principal-agent”. In this situation, the problem of adverse or reverse selection (taken by a main agent) is mainly based on the uncertainty about information available to the other side agent (opponent or partner): his knowledge or level of ignorance in a given context is key to game theory and sometimes corresponds to a random moral situation.

This first comment is of great importance in risk management. Several politicians and media leaders are now saying that it is unforgivable not to anticipate industrial disasters. This statement is quite inappropriate since unpredictable events cannot be anticipated. Moreover, we do not know whether to blame the bad faith of the some chief executive officers or the ignorance of those who spread rumors and speculative information. This based on the comments related to big events like: the Apollo 13 syndrome, the issue of the 2010 BP oil drilling in the Gulf of Mexico, the Fukushima nuclear plant catastrophe in 2011, or even the AF447 air plane crash. It is quite easy to utter criticisms after a given fact, especially when it is a replication of something already known. However, the “yaqua-fautquon”

syndrome has to be revisited in any process where nonlinear dynamics and high level of entropy apply: under these conditions, a disaster is always an occurrence of a phenomenon without memory. Also, in terms of sustainability, we cannot ignore that anticipation is a costly process (about the entropy) whose cover ability and reliability is very low.

In fundamental physics, when scientists ask for a question such as: “how does a particle ‘know’ something about its motion and evolution?”, what they are really asking is: “what are the forces acting upon the particle that we have not detected or unaware to explain (speed and position)? What interactions are taking place that we have not detected (subject to tunnel effects)?”. How many interactions exist? How strong are they in terms of intrication, entanglement and state superposition? Is there a big difference between quantum physics and complexity sciences?

In fact, it is a question of ignorance: many people talk about things that are going on at a level that we are completely unaware of. For instance, in the case of the double-slit experiment, the idea of probability waves as an explanation is nothing more than an attempt to describe what is observed in the quantum world. This could be also a subject matter in the case of study through a different theoretic field: the complexity sciences. Indeed, it is just a problem of interactions processing and self-organization at an upper level, where new organizations will emerge.

#### **1.3.2.1. *Empathy***

In most business companies, what is taken into account is not the hierarchical position of an employee, but rather his skill, his level of ignorance, whether he is greedy, etc., thus, his ability to understand and listen to others. This approach is essential: indeed, the new “Y” generation is not sensitive to the same values as their elders; they do not stick to the same principles, they want to understand the ins and outs of what is asked of them and they are thus able to express another kind of generosity.

#### **1.3.2.2. *Common sense and ethics***

In our practices to avoid not accepted drifts issued from some companies; populations or corporations; finally, a little more skill and a little less ignorance or curiosity to meet “natural” and “green” needs that every living being (even a pet) can aspire.

Another example can be with the quantum physics tunneling effect: this phenomenon, not yet applicable to human behaviors, is relevant from the same approach. However, if we just consider its application at the micro/mesoscopic level, we are starting to be involved since many products, around us, have specific properties and behaviors: then, even if we are ignorant of that, it is interesting to be rapidly kept informed and to adapt some clusters of people to such a new environment.

In fact, we can reverse the problem in stating that the description of an information status is directly depending on the ignorance status of an observer. Also, it depends on the inability to get some information according to our level of knowledge. Thus, a lack of information is directly related to our inability to describe consistent behaviors. This requires us to elaborate complex theories to fulfill that “hole”.

#### **I.4. What can we expect from ethics?**

But what are we going to do with our brain? What will our mastermind do?

Thanks to robotics, many repetitive and mechanical tasks are now automated, while our brain focuses on what is not repetitive: for example, it takes care of design, organization, invention and innovation. We design and market new products, design and program automated systems, organize productive processes and set up business engineering [VOL 14].

The brain will also take care of the outside world of the company, on which its organization has no control and whose developments are largely unpredictable. He will take care of the relationship with customers, suppliers and partners, as well as technological and competitive intelligence.

The relationship with customers becomes paramount in the computerized economy because they need information, or even training, to be able to choose the variety of product that suits them best, and also to use it by taking advantage of more functional features, more sophisticated and often complex. They need to know how to answer their questions, maintain their facilities, recycle and replace the end-of-life product, etc.

Thus, while the employment is practically going out of the conventional automated factories, it will be redeployed in cognitive tasks that prepare the future (product design, organization and programming) and those that ensure the relationship with the outside world, especially with customers.

In both the cases, the brain is brought into contact with nature. The brain, in contact with the outside of the company, provides useful information and lessons. Those in contact with customers, for example, provide information on needs and suggest changes in product quality. However, the company can benefit only if it knows how to listen to them. This is the purpose of the new “design thinking” and “social innovation” concepts that we will develop in the second part of the book. This is also what is happening with the “5-in-5” IBM development program.

It is a very important point. A human brain that knows or believes that no one is listening to him, ceases to function correctly soon: its potential is frozen, and then destroyed. Someone, for example, who reports a process failure or improvement performance problem, then proposes a solution that is neither considered nor applied, will eventually think: “Let them to manage the business; after all, we do not get involved!”. Then, we will stop reporting that kind of information because we feel it is useless.

#### ***1.4.1. Ethics and the trade of consideration***

The key to the social relationship with the mastermind is what we call the trade of consideration. It is also what we called “respect”. It is the aggregation of some concepts such as empathy, listening, giving consideration to the ideas and proposals from others, etc. Listening to what somebody is saying is making a sincere and strong effort to understand what he means [VOL 14].

This means that in a company, where various skills are located, some clusters (also called corporations) will emerge and act as defensive fortresses: everyone must know how to leave his fortress to listen to what the other is thinking and saying. This requires some efforts to translate what the other partners are saying in their own language to be able to assimilate and understand them, then to exchange.

Indeed, when giving consideration to someone, one begins the exchange by listening to what he says, respecting him as an individual who expresses

himself. It is the first step of inclusivity and you cannot behave in a respectful way towards someone who does not give the same respect in return: it is like a feedback loop present in a dynamic system that participates in the amplification of a phenomenon.

Within this so-called “trade of consideration” (as called by Pr. Volle), it is important to get a balanced exchange between the various skills, cultures, disciplines and hierarchical levels of the company, and even external partners, customers, in summary between all the stakeholders. T is a kind of peer-to-peer property.

#### ***1.4.2. Toward a more human socio-economic system***

According to Alexis Carrel (French philosopher), “The ultimate goal of a civilization is the development of the human personality”. Then, the objective of ethics is to position the human being at the heart of the system that he developed by himself. By system, we mean an economic, technological, social, political, etc., system.

Restoring man at the heart of a system he has elaborated, restoring his key importance, redesigning or simply re-engineering a modern humanism are the tomorrow challenges. In order to curb the increasing dehumanization of the world of labor, it should be just reminded that any system does not exist in itself, as cell automata: it is above all made up of individuals.

A human being must not be fully devoted to the system (financial, economic and professional); he must be an active and autonomous component, interacting with other individuals. Then, a company is a human construct assigned to the human welfare and his happiness.

To foster the professional world, everyone must be empowered and self-regulated. All the people must be encouraged to do their best (and not the worst) for a supposedly economic good, often short-termed, sometimes even inhuman and destructive. This consists in positioning men and their values at the center of the professional world. The Nobel Prize winner Daniel Kahneman called this approach an “economy of happiness”. Rethinking the world of work and the society requires showing everyone that what really matters is not money, social position, global incomes, profitability, but humanity, altruism and well-being.

## I.5. Objectives

The aim of this book is not to study the causes of these drifts but to focus on the approach to be that always starts with:

- how can we define what is acceptable or not?;
- how can we act in the interest of society (the “stakeholders” as defined by the experts)?

Under the influence of our society, where consumption and ill-being are galloping, people tend to become indebted to commit themselves to the limit of their capacities, either at the physical, intellectual level or at the financial level, and this generates security needs.

To remedy this, we have to create a better world governed by numerous laws, administrative procedures and subject to various controls and monitoring. This is safe, hence raised the tendency to legislate on everything. However, regulations always have their loopholes and limitations, so it is always possible to circumvent them and use them for the sake of honest or dishonest needs. This is what the authors of many scandals are doing: this is also the reason why we need for safeguards.

Legislate again? This will have no effect because [MAS 10a, MAS 10b] the approaches must be global, comprehensive and consistent: at this time, this is not yet the case since laws, practices of ethics and decisions are made separately in each country or government. Hence, it is a process that requires consensus and time. Some people think that they can act by exerting intellectual or social pressures on the authors of these drifts: in fact, it is the pressure of the media that reinforce the views of politicians and populations and impose a restraint (or a push) in terms of codes. It is a quite “normal” approach, in the sense where media can amplify the expectations and needs of a population.

Others think that we have an alternative solution: thanks to ethics and creating a change of state of mind, we can exert a moral pressure, including professional ethics, whose principles are clearly defined, and would be able to fulfill the administrative and legal “gaps”. This approach extends and replaces the pressure from the media by the social networking: it is the citizen who acts then, directly.

Over the last fifteen years, everything seems to announce the return of ethics (bioethics, the fight against corruption, business ethics). In our society, there is a real demand for ethics. However, ethics has difficulty in anchoring its values in areas that could be based on them. Through what has been written, it is clear that there is a transfer of initiative and responsibility, in the following way:

enterprise → government → media → citizen.

Basically, it is a way of providing rules of behavior that are playing the role of safeguards in specific situations and to implement means to enable the agents of a vocational service to act in accordance with business ethics. It is within this framework that groups of people of goodwill throughout the world, such as Rotary or others, can work on this huge task.

What we can say, right now, is that ethics, like morality, is not universal:

– there is no standard;

– it evolves over time;

– it is pluralistic, in the sense that it is depending on social culture, education, economy, geopolitics, sectors of activity, modes of life, etc. Thus, we will therefore try to remain concrete, and we will be based on a few concrete cases (IBM, ROTARY, etc.).

## **I.6. Conclusion: a few words about the sustainability of ethics**

In this handbook, we will see that “Ethics” is generally focusing on the approaches developed by the Ancient Greek: due to our rationality, we keep looking for items, facts and causes which govern the design of a new and better world, the speed with which the system develops, the emergence of new concepts, welfare, etc.

For example, with regard to our environment, the Greek considered that the original and mother elements in nature were: water, air, earth, fire and ether. The ether, as in our current physical theories, allowed explaining what remained unknown; it is an intangible and transparent element, we are not able to describe its properties. It is able to bring out an emerging “field”, as for spirituality to better understand how ethics must be handled and associated with its underlying mechanisms.



In the “Sustainability Handbook”, we said that today it is very difficult to measure such sustainability. One way to learn about measuring the sustainability of our systems under development is to resort to the so-called “entropy generation”; the objective being to provide society with “Reduced Entropy Generation Systems”. In ethics, the problem remains the same: ethics is a paradigm change, and an awareness issue; its evaluation presupposes a set of drastic changes from standards, policies and practices, in our own values, consciousness and way of life.

Similarly, with regard to our experience, we said that sustainability is driven by some specific codes. To drive and manage a system created and developed by man, we have identified the following codes, in analogy to the five former elements able to unify the construction of the world (Figure I.1).

*The Code of Matter:* enables to understand a lot of phenomena such as aggregation, growth, gravitation properties leading to → *quantum physics*.

*The Code of Life:* the *DNA* (is a set of molecules that carries the genetic instructions used in the growth, development, functioning and reproduction of all known living organisms. It is used in *Biological constructs, Genetic Engineering, Bio-Informatics, Nanotechnologies, etc.*

*The Code of Thought:* the *Brain*, its capacity to reason and develop thinking → *Consciousness and Ethics*.

*The Code of Energy:* in thermodynamic physics, energy is the property that must be transferred to an object in order to perform a work → *Entropy, etc.* Applications are everywhere (*Biology, Manufacturing, etc.*) and have a key impact in designing *reversible/non-reversible transformations, Organizations Management, etc.*

*The Code of Complexity:* the new geometries (chaos and fractals) and NonLinear Dynamic Systems → *Network Theory, Social Networking, Sciences of Behaviors, Sharing economy, etc.*

**Figure I.1.** Five code types that underpin the environment of ethics

In this book, we will also consider that ambivalence and dialogism are a basic concept of nature: it is a state of always having simultaneous conflicting reactions, beliefs, attitudes or feelings towards some object or situation, everywhere in our interconnected world.

Stated another way, ambivalence is the experience of having a behavior towards someone or something that contains both positively and negatively balanced components, actions or reactions; this leads to get equilibria (stable or unstable), or consensus, sufficient enough to experience uncomfortable situation based on uncertainty or indecisiveness. Under these circumstances, ethics will be a new way of thinking, and the means by which to overcome such difficulties and to decide on the basis of the rules and properties relevant to the five codes mentioned above.

This is an important fact since, in this context, we will approach ethics in a more holistic and global way, all throughout this book.

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# The Rotary: Organization and Motivations

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## 1.1. The Rotary in a few words

February 23, 1905. A young lawyer from Chicago, Paul Harris, met three friends at home: a tailor, a coal dealer and a mining engineer. The four men, questioned and motivated by the difficulties and moral drifts they encountered, had the same goal: to try to revive and recover, in the big cities, the spirit of friendship and mutual assistance between businessmen whom they had known in the small towns of their childhood. They were of American, German, Swedish and Irish origins, and of Protestant, Israelite and Catholic faiths.

Soon, other businessmen who shared their goals attended their meetings and, by the end of 1905, the Rotary Club of Chicago already had 30 members: it was a team of various jobs, working in a climate of trust, friendship and integrity, to be “kind, respectful and helpful to one another”. The name “Rotary” was selected for their group due to the fact that its members met in turn, every week, at their workplace. The Rotary grew rapidly and became an International Organization as early as 1912. One hundred years later, Rotary has more than 1,200,000 members in 33,700 Rotary Clubs around the world.

Rotary is therefore a cluster of various skills and professions, men and women, of high probity, with well-agreed expertise, issued from all the countries in the world, respectful of human beings, who are working to achieve the development of harmony and understanding between people, trying to improve their standard of life and promoting peace, without any distinction of culture, race or religion.

The Rotary International (RI)<sup>1</sup> has always been committed to serving the general and global interest. The Rotary members have to apply their “Ideal of Servicing” either in their private area, or their vocational and public life. This commitment is centered on five basic domains of action that form the cornerstone upon which the club’s activities are based. To provide more meaning and consistency to our actions, a vision, or strategic plan, has recently been set-up.

## 1.2. Strategic plan: a vision

The Rotary Strategic Plan has been defined to give a long-term vision, and prioritize the targets of our action plans. More specifically, it is dedicated to seven areas of focus in order to build international relationships, improve lives, and create a better world to support our peace efforts and end polio forever. Among these seven areas listed below, the first six will soon become the backbone of the future Rotary strategic plan:



1) Promoting peace: The Rotary encourages conversations to foster understanding within and across cultures. Its objective is to train adults and young leaders, to prevent and mediate conflict and help refugees who have fled dangerous areas.

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1 [https://en.wikipedia.org/wiki/Rotary\\_International](https://en.wikipedia.org/wiki/Rotary_International)



2) Fighting disease: its goal is to educate and equip communities to stop the spread of life-threatening diseases like polio, HIV/AIDS, malaria, etc. The Rotary improves and expands access to low-cost and free health care in developing areas.



3) Providing clean water, sanitation and hygiene: The RI supports local solutions to bring clean water, sanitation and hygiene to more people every day. We do not just build wells and walk away. People have to share RI expertise with community leaders and educators to make sure the projects succeed in the long term.



4) Saving mothers and children: nearly six million children under the age of five die each year because of malnutrition, poor health care and inadequate sanitation. RI expands access to quality care, so that mothers and their children can live and grow stronger.



5) Supporting education: more than 775 million people older than 15 years of age are illiterate. Our goal is to strengthen the capacity of communities to support basic education and literacy, reduce gender disparity in education and increase adult literacy.



6) Growing local economies: The RI will carry out service projects that enhance economic and community development and create opportunities for decent and productive work for both the young and old. Its goal is also to strengthen local entrepreneurs and community leaders, particularly women, in impoverished communities.

7) Ending polio forever: The Rotary has been working to eradicate polio for over 30 years, and our goal of ridding the earth of this disease is in sight. This program started in 1979 with vaccinations for six million children in the Philippines. Today, Afghanistan, Nigeria and Pakistan are the only countries where polio remains endemic.

### **1.3. Organization of actions and projects in the Rotary**

Rotary members are helping others in communities around the world every day through thousands of service projects. For this purpose, the

organization, common to most Rotary Clubs, is set up and renewed every year:

– Each club elects its own president and officers among its active members for a one-year term. The clubs enjoy considerable autonomy within the framework of the standard constitution and the constitution and bylaws of The RI. The governing body of the club is the Club Board, consisting of the club president (who serves as the Board chairman), a president-elect, club secretary, club treasurer and several Club Board directors, including the immediate past president and the President Elect.

– The president usually appoints the directors to serve as chairs of the major club committees, including those responsible for club service, vocational service, community service, youth service and international service.

Indeed, The Rotary Club is often organized in five parts, or responsibilities, so that they can initiate, implement and follow all the programs and projects in progress:

1) Club service (domestic actions): the internal action consists of ensuring the management of the Club, strengthening the spirit of friendship and ensuring its smooth and effective operational management.

2) Vocational service: professional action encourages Rotarians to serve others through their vocational job and to apply their sense of ethics. Rotarians can share their expertise and skills with altruism and thus be a model and motivating factor for other partners. They must observe rules of high probity in the discharge of their duties, in any profession, respect the dignity of any useful occupation and consider the professional work fulfilled by each Rotarian as a possible vehicle of actions to help in the improvement of the society.

3) Community service (local public interest actions): public service action allows clubs to take action and undertake activities to improve the well-being of the local community.

4) International service (global public interest action): international action includes actions to extend the humanitarian reach of The Rotary worldwide,



and to promote altruism, respect for peace and mutual understanding among people. It is carried out through contributions to PolioPlus and through the help given to young professionals to participate in an exchange and to adapt to a host country.

5) Youth service (young generation actions): the young generation action recognizes the positive changes brought about by young people and young adults through leadership development activities, local and overseas action and exchange programs that enrich and develop peace and prosperity.

6) To develop Youth Services, an International agreement has been set-up, and several youth programs have been defined and implemented through, for example: Rotaract, Interact, RYLA (Rotary Youth Leadership Awards), student exchanges, scholarships, etc.

#### **1.4. The Rotary leadership**

In addition to the above organizations, The Rotary's programs are developing the next generation of leaders, providing funding to make the world a better place and to make peace a priority. These programs are not just for club members. Their objective is to learn how to make a difference in our community through leadership principles as promoted within The Rotary:



– Rotary Peace Fellowships: each year, Rotary selects up to 100 professionals from around the world to receive fully funded academic fellowships at our Rotary Peace Centers.



– Rotary Community Corps: to find community solutions to community challenges, Rotary Community Corps unites Rotary members with non-members to make a positive difference.



– RYLA: RYLA is a leadership development program for young people who want to learn new skills, build their confidence and have fun. Events range from one-day seminars to weeklong camps.



– Rotary Youth Exchange: Rotary Youth Exchange builds peace one young person at a time. Students learn a new language, discover another culture, and truly become global citizens.



– New Generations Service Exchange: New Generations Service Exchange is a short-term, customizable program for university students and young professionals up to 30 years of age. Participants can design exchanges that combine their professional goals with a humanitarian project.



– Grants: for 100 years, The Rotary Foundation has been turning project ideas into reality. Our clubs receive funding to support humanitarian projects, scholarships and international exchanges.



– Scholarships: The Rotary invests more than \$7 million per year in our future leaders and philanthropists by funding scholarships for undergraduate and postgraduate studies.

– Job forum: every year, many Rotary Clubs get involved in the so-called “forum” where one-to-one discussions take place, in order to help and give advice to young people in secondary schools. Here, Rotary members can directly inform the students about their vocational experience, professional knowledge, career development, management rules, recommended behaviors, etc.

Once again, Rotarians must accept to fulfill such a role since this will enable the creation of a better world. In some areas, however, it is difficult to develop leadership, due to the established educational structures. And so we are limited to the role of followers: since the momentum is already there, our mission consists of simply being a coach, not to have bitterness, but to feel confident in focusing on leadership and business ethics because young people always remain eager to learn about their future job and vocational evolution.

Most Rotary members are committed to the vocational mission of their club and are highly skilled in their given roles.

Going back to business ethics, the more frequent attributes, on which we focus are:

– self-management, respect and courage. Indeed, the first role of a leader is to be able to work independently and maintain a high level of ethical standards;

– completed staff work: this consists of always doing a fully analyzed, elaborated job associated with considered results and proposed decisions, similar to what a coach does to successfully make progress.

Here, we find what was commonly taught, trained and followed at IBM. This is not to say that our willingness was not to win at all costs. But most of the ethical values can positively contribute to a sustainable business. This is why The Rotary is so involved in this program.

## 1.5. Business ethics management: the four-way test

The Rotary has a “code of ethics” which is now replaced by the so-called “four-way test”. Since 1981, the main purpose of this test has been to develop and maintain high ethical standards in human relations and vocational service.

The four-way test is related to all the things we think, we say or we do and it is given as follows:

- 1) Is it the truth?
- 2) Is it fair to all concerned?
- 3) Will it build good-will and better friendships?
- 4) Will it be beneficial to all concerned?

Any business, even one dedicated to increasing sales or profits, has to be conducted in such a way that the human and business relations of the firm, organization or institution are in agreement with the lines of the four-way test.

Within, or inside The Rotary, the worldwide relationships, communications and information exchanges also have to be conducted along the lines of the four-way test. The test should not be referred to as a “code” (the one defined in 1932).

## 1.6. How to conduct efficient ethical debates?

We are often faced with the distress of hungry people, poor individuals who have lost their homes due to earthquakes, natural disasters, etc. What can be done? Do we have to continuously bring food and tents to these starving people? Can we act more efficiently and send complaints or observations on human rights practices or law and order to those responsible? The same questions arise with the doping of athletes, the prohibition of drone warfare on moral grounds, etc.

### **1.6.1. Entertainment and ethics**

For many people, thorny ethical questions can be difficult to process. For some non-profit organizations shown on TV and in the media, which are often mainly concerned about buzz, the moral ambiguity and support actions are sometimes reduced to discussions around culinary shows where special dishes and drinks are served.

Rotarians look to the four-way test when we are ethically evaluating whether to do something, but people offer different perspectives and have their own moral yardsticks. This is common everywhere as many people are quite busy and get requests from all sides.

The questions are: how do we quantify ethical dilemmas? How do we engage people in ethical discussions in a positive and attractive way? How can we ask for the tough questions?

### **1.6.2. Barcamps, think tanks and showcases for new ideas**

To address these questions and still improve our ability to implement business ethics in our practices, we must be sensitized to that concern. Just as a reminder, we can notice the following:

- a long time ago, the Greeks had their acropolis and the Romans their forum;
- during the Middle Ages and later, we had issue-based discussions with men and women from the nobility, in the castles;
- more recently, organizations such as The Rotary played that role. Now, such discussions are conducted through social networks.

Good team work is based on the contribution of people coming from various areas, institutions and groups, including different non-political people, jobs and cultures. The problem lies in being neither superficial nor temporarily emotional.

This is why bringing together many people from different backgrounds to talk about ethically focused questions, in a meeting room for instance, is the most efficient and innovative way to think about ethics implementation, to perform a more in-depth analysis and to promote it. It is an integrated and unique approach, as encountered in The Rotary.

### **1.7. Summary of the missions and roles of the Rotary**

As can be seen, The Rotary's goal is to SERVE, in agreement with a number of core values such as Respect, Service, Fellowship, Diversity, Integrity or Probity, and Leadership. It is this set of values that constitutes some of the foundations of Ethics in the Rotary.

It was on this set of values that a pamphlet was originally drafted in The Rotary, for new members. The aim was to allow new members to think about ethics and to be able to participate in a manner that was consistent with the philosophy of the Rotary. But, it is important to put the Rotarian in the society in which he/she lives, to position him/herself in conjunction to what exists around us, to understand this philosophy in a wider context by also allowing everyone to pick up critical points and understand how to live better together and how to participate to create a more sustainable world.

It is therefore a broader and global framework of actions that is proposed to anyone who wishes to invest themselves within the overall interest of our society. Many points of view presented here are subjective and require a kind of analysis: there is therefore a very open field of discussion that specialists, philosophers and sociologists will open or ignore. However, there are no false perspectives, given the reactions of students or other populations with whom we discussed these topics. Indeed, being involved in several RYLA seminars (the last one in 2012 D-1700 was dedicated to Business Ethics) and based on several reports (those of the academic winners of the Ethics Prize, delivered every year in France), we can say the following: some minor discrepancies between the theorists and the practitioners may occur, but the basic concepts behind various ethics models remain the same.



## 1.8. Importance of business and vocational ethics in the Rotary

First, most professionals have an informational advantage over those they serve. This is due to so-called information asymmetry: this power can be exploited to the advantage of the professional and thus there needs to be a corresponding sense of professional responsibility that obligates the professional to act in the client's best long-term interest and, additionally, to take appropriate measures, to make necessary disclosures and to secure consent to protect the client and assure that the professional's behavior is improving.

This is particularly true with new technologies, the development of biotechnologies, for example, and a lot of discussions are now undertaken everywhere in the world. It is the responsibility of the Rotary, which behaves as a think tank to discuss these very important societal problems, to help our partners, in any field of activity, to take up these new challenges: indeed, we have to be able to identify these future moral hazards and provide the appropriate avoidance or work-around strategies.

Second, most professionals and scientists working around us are, at some point, young and inexperienced. Thus, professional and business ethics represent a kind of collective, time-tested wisdom that can be transferred to new professionals: it is the role of the Rotary to avoid deviances and to give advice such as "be careful on this point", "watch out for this" or "do that". It is a way to contribute to creating a better society. Also, with rapidly changing laws, technologies and social cultures, professional standards and ethics are complementary in keeping the profession, in a given field, abreast of new ethical challenges, emerging responsibilities and best practices.

Third, professional ethics act as a somewhat effective countervailing power to organizational influence (such as political or social pressure) or the power of authority (such as from a supervisor or boss). Everybody, in their professional career, has been faced with so-called RIP (Rank Is Privilege). This is a kind of practice we cannot accept any more in our society: it is neither fair nor ethical! The role of the Rotary is to help in promoting ethics and to explain how one should not be swayed by influential people.

Finally, insofar as professional ethics often get promulgated by professional organizations, like The Rotary, they may play a role in enforcement and disciplinary action with respect to those who ignore or violate such standards.

### **1.9. Comment about empathy and ethics**

Empathy is a common, universal and scalable emotional and cognitive capability that allows us to be sensitive, understanding and to respond more appropriately to the subjective concerns of others. Empathy thus allows us not only to feel the emotions and feelings of other human beings, but also to know, predict or anticipate their behavior in order to better adapt our intersubjective behavior. This behavior can range from simple cognitive and social coordination up to truly ethical behavior.

Thus, the conventional definition of empathy, which oscillates between that of sharing of points of view and that of emotional sharing, could be subject to a natural convergence and provide a way for better inclusivity.

Empathy can be considered as a powerful contributor to ethics. Indeed, empathy is part of a “moral sense” and plays an essential role in the prescriptiveness of ethical principles, even allowing us to grasp them, if necessary, and to ensure their ultimate development.

As we will see in Chapter 11, which is intended to explore the complexity of ethics, empathy is necessary but not sufficient, since there are many factors involved in the successful application of ethics into business (for instance: respect, sympathy, humanism, etc.). In contrast, lack of empathy encourages exclusivity (in terms of immorality and even amorality) since there is an open door to indifference and the distress of others. Valorization of empathy and focusing on the importance of its development can be done through education and training of both youths or adults. It is a daily challenge.

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## Ethics: Some Definitions and Concepts

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In order to clarify the reading of this document and to better understand each other, some definitions related to key terms have been resumed and outlined in this chapter. It is not a matter of imposing views or concepts because everything is diversified and evolves overtime. We will simply describe a “present view”, as consensual as possible, of what we mean by “Business Ethics” and further discuss that subject matter. The aim is not to present theories or research on these concepts but to get an image at a given moment in order to move forward on this sensitive, difficult and very complex field of ethics.

### 2.1. Ethics

The word Ethics comes from a Greek term *ηθική* (ethiké), which means “habits” or “customs”. Originally, Greek philosophy questioned the principles that are able to guide human actions: ethics is the search for rational foundations about the right thing to do or the well-done action.

Its purpose is to indicate how human beings must behave, their way of being and acting, among themselves and to what surrounds them. It is therefore a practical (action-oriented) and normative (with its rules and criteria) philosophical discipline in a natural and human environment to act freely, and at best, choosing a behavior respectful of oneself and others. It is not therefore a question of knowledge acquisition or of gaining experience for oneself, but of acting within a given societal framework.

Ethics is a precise but fuzzy notion, which takes different meanings depending on the context and environment in question:

– Depending on the environment, we will talk about individual ethics or social ethics.

– Depending on the subject, we will talk about ethics of the environment, bioethics, scientific ethics or professional ethics.

– Depending on the cultural field, we will find religious and secular ethics, or even artistic ethics or tradition.

## 2.2. Professional ethics

Professional or vocational ethics is everywhere, in all activities. As for general ethics, although it applies to a smaller field it also has several meanings:

– In a company, and considering its social dimension, it is a matter of “making sure not to be fired and not to leave a business in waves: short employee turnover is never profitable to a company.

– In an administration, it is a question of “respecting people and citizens”.

– In agriculture, it is a matter of producing “organic” crops and remaining in accordance with its principles.

– For a craftsman, it is to serve the customer as best as he can, respecting his confidentiality and without discrimination.

It is thus, in our everyday lives and in each case, to be able to integrate into our actions and decisions the notions of good and evil, and then, to define a course of conduct in accordance with what is allowed in our society. To be more precise, professional ethics will be defined as follows: *“professional ethics is the art or science of personal behavior morality, related to a professional activity; it brings together notions, principles, moral and ethical values that make it possible to assess an act or the absence of an act as being something acceptable or unacceptable in the minds of human societies, and in the framework of professional activities”*.

It is on this basis that we will try to act.

### 2.3. Moral values

Morality includes the set of social norms imposed on each person. Latin/Roman thinking has, in a pragmatic way, instilled a formal and imperative connotation of this notion of morality.

In short, concerning morale, ancient philosophers make a difference between:

- acting in accordance with duty (in compliance with rules and laws);
- acting by duty (i.e. in accordance with some specific interests!).

This is of key importance: considering the deviances now observed either in finance and politics, we can say that a law (or a rule) is not mandatorily moral, as morale is not always in accordance with law.

In everyday life, it is common to hear definitions of what moral values are. In fact, the notion of “value” is quite similar to that of “morality”. Referring to some dictionaries such as the “Petit Robert”, and also to the online encyclopedia Wikipedia, it is possible to develop the following definition:

*“The ‘value of an action’ is a general principle of moral inspiration, serving as a reference in the judgments and the conduct of an individual person. Value is aimed at directing the action of individuals in a society by setting goals or ideals, in other words, by giving them means for assessing their actions. These values are often abstract and form a consistent and hierarchical file set called : ‘system of values’”.*

Today, the question is: “how do we build this system of values”? In this definition, there is a great deal of subjectivity at both the individual and the collective levels, with all the interpretations that result from them. However, public institutions, as are introduced below, have always tried to formalize the notion of morality. Some other concepts will also be used in this document and we will introduce them right now.

### 2.4. Deontology

Deontology is a normative ethical position that evaluates the morality of an action based on rules, used to conduct business in a given sector of activities, or in a corporation.

It is sometimes described as “duty-”, “obligation-” or “rule-” based ethics, because rules “bind you to your duty”. Deontological ethics is commonly contrasted to virtue ethics and pragmatic ethics. In this terminology, action is more important than the consequences.

The term *deontological* was first used to describe recommended practices we need to have within a company. It was developed by Broad in *Five Types of Ethical Theory* [BRO 30].

We will then keep in mind that deontology is a kind of “ethical code”, in the context of professional ethics. Differently said, we will define deontology as follows: deontology is a concept modeled by a set of professional rules aimed at respecting the interests of the company, the customers and colleagues, and the good practices of a trade. Ethics is often referred to when dealing with medicine or biology; deontology has been extended to many other areas.

## 2.5. Ideology

In the following, “ideology” is considered as a set of mental models, sometimes psycho-rigid, hiding the need for power, domination and control in the society. Indeed, ideology is based upon conscious and unconscious ideas which make up one’s beliefs, goals, expectations and motivations.

A typical example of such an attitude is the relation of a teacher to his students: it is a deontic authority similar to the relation between an employer and his employee. The teacher has epistemic authority when making declarative sentences that the student presumes as reliable knowledge and appropriate but feels no obligation to accept or obey. In contrast, an employer has deontic authority in the act of issuing an order that the employee is obliged to accept and obey regardless of its reliability or appropriateness.

More simply, ideology is a collection of beliefs or visions held by an individual, group or society; it is an imaginary relation to the real conditions of existence and may entail specific systems of thought. Though the word “ideology” is most often found in political discourse, since they traduce relations of domination within a society, they are of different kinds: political, social, ethical, psychic, etc.

## **2.6. Ethics: notions of right and wrong, good and evil**

### **2.6.1. Introduction**

When one makes a difficult and personal decision, one cannot often rely on any reference and one will then decide in the best way, that is to say in soul and conscience, so that the decision is the best possible and that the negative impact will be as low as possible.

If the decision maker is asked what he/she favors in his decision-making process, he will answer that by doing the best he optimized a political gain or effectiveness (we are in the material level, secular level, etc.), or he will try to dissatisfy the minimum number of people possible (we are in the frustration and psychic field). If people do not agree together, one will put forward the fact that more rigor and mental discipline are required, that we cannot do anything immoral, or dishonest, etc.

Formerly, order, credibility and work were put forward; nowadays, social values are different and we are a little bit lost.

Let us take an example: the leader of a band of drug dealers. Every day, thousands of Euros are handled and it is a team of about twenty people who are involved in this activity. On television, we heard about the fact that a band leader must be seen as an entrepreneur: he manages a team of 20 people and provides dozens of people with a decent income. If asked if what he is doing is right, he answers without any hesitation: “YES”; this is a point of view of his personal ethics and he thinks he can continue this business.

Through this example, several comments are necessary:

– There is a huge gap between the world of good thinking (the upper strata of urban society, the Yuppies, etc.) and the modest or marginalized people of our society.

– The notion of good or evil is a very relative one, according to each one’s culture, the social classes considered and the societal or political context.

– In a system where class struggle, strikes, etc. are present, democracy is in danger because everyone is wrong and right, at the same time ... so, there is no more authority and ethics.

To avoid risky interpretations, it is therefore necessary to harmonize and define the concepts of ethics. This is all the more true as today, with the loss of values and references in our evolving society, many people do not seem to know exactly what ethics, good and evil mean.

### **2.6.2. What is good?**

According to the definitions of the Greek philosopher Plato, “‘Good’ is that which has no other finality than the human being himself”.

By focusing on our knowledge of the world, things or processes in so far as they exist “beyond” and independently of the sensible experience we have of them, the “Good” designates what is, unconditionally and independently of all constraints, a desirable fact.

It is partly linked to desire (in the sense of need which is lacking, or of suffering which one must satisfy, according to the Maslow pyramid), but also and more specifically to the desire defined as positivity, that is to say, as a generator of value (since it is linked to a source of pleasure, contentment and happiness).

This global form of a human desire is based on the mind as opposed to an animal desire which is mostly based on the physical senses. And so, when Socrates says that “the person who makes a mistake or a fault is a bad archer of the existence: he was badly pointing at the target which is the same for all of us : goodness” [DOR 76]. Socrates explained that human desire is to do good actions (in the ideal sense of the term) but it must be understood that it is not a question of the animal desire which, on the contrary, pushes man into the world of animals, in the first levels of basic “prey–predator” type systems of the first level, for simple reasons of greed (which is, indeed, a bad choice).

“Good” is a term that appears in many philosophical works and papers: its definition and interpretations may vary somewhat:

1) We make a difference between “good”, which is an outstanding achievement, a categorical, supreme, or even ideal property when we are doing something well, with the notion of “good”, in its relative and restricted area, when the achievement is just correct or effective. The good is what makes it possible to measure or evaluate the quality of the good. It is as in



philosophy, where we will distinguish the notions of “ideal” and “idea”, which refer to distinct concepts.

“Good is not just bringing happiness”. We have to distinguish an ideal and general good, to an accomplishment that designates what is good because I can appreciate what has been done (something that I can evaluate and approve. An act announced as “good” is therefore, if it is not to be fully carried out, a thing which we must realize; and, if it has already been accomplished, it should be something well-evaluated and approved.

2) In the Greek tradition (Plato), good is the possession of happiness, which is an ultimate state pursued by every human being.

3) In Kant’s analysis, the expression “Sovereigned Good” sometimes refers to the idea of something worthy, which is only relative to morality, and sometimes to an absolute state of fullness, which is not fragmentable.

4) According to Rudolf Steiner, the original design of something “good” often stems from some automation of our mental system. It is done in a constrained way. While the true and real good is recognized as fair and executed with love.

### **2.6.3. *What is evil?***

The idea of evil is associated with all miscellaneous or unintended events, damages, reprehensive behaviors, threats or risks, being either destructive or immoral, and which are sources of moral or physical suffering or pain, at the level of any individual.

Suffering, or pain in the broad sense, can be physical or mental, depending on whether it is primarily related to a somatic or psychic process in the human organism. In terms of symptoms: pain (as a sensation), nausea, respiratory distress and itching are examples of physical suffering. Anxiety, grief, hatred and boredom are examples of mental suffering. Their intensity and combination may be so high that such pain or suffering can become unbearable to an individual.

Neglected during the antiquity, which held that evil was only an opinion and not an intrinsic perception, it has become a philosophical problem with the doctrines of the Greco-Roman philosopher Plotinus (posterior to Plato).

Plotinus is primarily known for his understanding of the social world which involves three hypostases (that is to say, fundamental principles):

- The One or the Good: the ONE is a supreme singularity, a basic and original principle. For Plotinus: it is the seed, i.e. the cause of everything existing in the universe, from matter up to justice.

- Intelligences: they contain all that can be thinkable, that is, the set of ideas, or intelligible patterns in the sense of Plato. Indeed, intelligence, for instance, is strongly related to comprehensive reality and truth.

- The Soul of the World: As one moves away from the “One”, the world gains an increasing diversity, thus losing its initial unity and perfection. The concept of Soul therefore operates at varying levels of complexity: the (initial and global) Soul of the world is the most perfect, while each individual soul (local and personalized) has its own degree of perfection. The Soul develops and deploys, overtime, the varying contents of the Intelligence. The Soul is not, as stated by Aristotle, a principle of life; the Soul has become the highest activity of life; it is considered to be similar to the notion of consciousness and sensitivity. Here the sensible is made of all the psychic perceptions and mental representations we may have.

Among the problems long associated with evil, two have a particular importance: the question of what evil is and why it exists. To ask the philosophical question of the existence of evil consists of asking whether or not the “evil” has a specific being or if it can be considered as an independent entity. Indeed, as outlined by Étienne Borne<sup>1</sup>: the main characteristic of evil can only be thought, and lived only in relation to a given idea of good. We often say that nature is an ambivalent concept: it always implies two antagonistic notions that are at the same time partially involved, depending on time, culture and circumstances, to get a best for fit equilibrium. For human kind, antagonisms have an upmost and universal property of ‘absolute’: most of our societies, for instance, give a fundamental and high value to friendship and love; in contrast, they hate murder and barbarity.

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<sup>1</sup> Definition of “evil”, *Encyclopædia Universalis*, accessed on 18 December 2014 at: <http://www.universalis.fr/encyclopedie/mal/>.

This is the reason why in most societies, we have to focus on values such as friendship and love and conversely despise murder and cruelty.

#### **2.6.4. Good and evil: complex phenomena**

Usually, everyone more or less agrees on the meaning of what is good or bad or evil. All religions, all laws (at the governments or companies levels) have the same basic prohibitive instructions: security, killing, stealing, mutilating, (except in ritualistic cases, in some communities) causing suffering, lying, stress, etc.

The Ten Commandments, also known as the Decalogue, are a set of biblical principles relating to ethics and worship. The Decalogue with Moses and his “Tables of the Law” (i.e. the Ten Sayings for Judaism or the Ten Commandments for Christianity) is the typical example of these fundamental prohibitions aimed at reducing evil in humanity. These prohibitions, according to the religions considered, apply either to the members of the same religion or to all humanity.



**Figure 2.1.** *Moses showing the Tables of the Law (José de Ribera, 1638)*

In the above painting, the commandments include instructions as well as prohibitions against idolatry, blasphemy, murder, adultery, theft, dishonesty and coveting.

Practically, however, certain situations lead one to wonder: should we not sometimes accept and even do evil, within a utilitarian way, for the purpose of “utility”? This is highly worthy to, indirectly, avoid a greater evil. It is the same approach for when a death could avoid a war, a war could avoid a genocide, and at last, torture could avoid a massive terrorist attack. Is it ethical or moral? It is a question of a general interest, and: “A present goodness may be the source of great evil; An evil, the source of a great goodness” [DID 62].

There is also the difficulty of defining morality, certain actions and behaviors that do not lead to suffering, such as avarice or the “Zorro” attitude: they are, however, often deemed as immoral, and therefore associated with something evil. Various and divergent answers show that it is not easy to define what the term “evil” means. To borrow an idea from Louis de Bonald: “it is sometimes easier to do his duty than to know him”.

Independent of the belief in the existence of God, one can speak about the existence of evil through the justification to measure and make a comparison between this by the need to contrast the evil with its opposite. “The question of good and evil remains an unshakeable chaos for those who seek in good faith...” [VOL 71].

This is because our lifespan is limited and our capabilities for action are limited so that our choices have meaning and are important. Without addressing the problem of evil from the standpoint of philosophy (from Platon till now), it still represents a challenge. In the next part of the chapter, we will limit ourselves to the well-known notion of guilt.

### **2.6.5. Evil: culpability, responsibility and punishment**

On the subject of guilt (both individual and collective, imaginary or real, normal or pathological, and conscious or unconscious), one can deal with the complexity relevant to the phenomena of ambivalences that feed back together. This is what was introduced in the previous section and will be developed in a later chapter (Chapter 10, “Ethics and Complexity”).

At the time of the Bible, responsibility and guilt were easy to determine. This is no longer the case today in a complex, massive and narrowly structured modern society. “We can no longer consider that evil is a small personal and private matter, as if shames and poverties (humiliations and miseries) due to a social injustice (unjust order) escaped any search for ontic responsibility”. The difficulty grows because in many cases the consequences of our actions escape from our own control systems, and that often “the road to hell is paved with good intentions”. It is a matter of observing that the new societal order, in the world, often increases the tragic doom of human beings, because of the possible consequences of any little thoughtless act. Here, we can quote the impacts due to the conflicts between contradictory, or ambivalent, behaviors such as fanaticism and peacefulness, selfishness and altruism, etc. The basic underpinning mechanisms being the SIC (Sensitivity of Initial Conditions) due to feedback loops in any interconnected system.

Günther Anders is a German and an Austrian Jewish philosopher and journalist. He is well-known for being against new technologies and nuclear energy. The main subject of his writings was the destruction of human species. He placed great emphasis on the discrepancy that may exist between the impact of an act and the feeling that one has of it.

Faced with the huge increase of the technical, economical and industrial powers and its possible consequences, the human ability to anticipate his future, to appraise, feel and imagine something is anthropologically very limited. And then, the evaluations of what is good and evil and their impacts on human beings are very difficult tasks.

This existing gap between the predictable consequences of our actions and the feeling we have of them, is what Gunther Anders calls “hateless massacre”. It is a step on the road to our dehumanization. The same observation can be carried out with the drug trade, exclusion in economy, greedy attitudes of some managers and politicians, etc.

In any complex system, we call that well-known evolution a non-predictable and deterministic chaos: it is a common trend, but that which is fortunately limited with a mathematical envelope.

### **2.6.6. Interactions between the different concepts**

Speaking of ethics, one comes to speak of good and evil. But this is a first level of thinking (level of integration); because, on the conceptual level, we have to consider an interconnected system where “Good”, for example, is related to other strong concepts or “values”, such as beauty, justice, truth, etc. More formally, a hierarchy can be established for the moral or spiritual values. It is based on the work of the philosopher Friedrich Nietzsche: “The Genealogy of Morals”. This writing was published in 1887. Its aim is to show where contemporary moral values come from and why we should change it for so-called “healthier values”.

The notions of ‘good’ and ‘justice’ are of key importance because they may be conducive to two different ethics concepts:

– If we give the priority to ‘good’: morale and ethics are so called ‘attractive concepts’.

– If we give the priority to ‘justice’: morale and ethics are ‘imperative’ concepts.

This was perfectly understood by Aristoteles: in order to avoid any misinterpretation, he used to give core priority to ‘good’; thus, our conduct is unconditionally driven whatever the desires, beliefs, intents or interests we may have.

On the basis of this study, it can be considered that three criteria, or variables, allow us to compare the characteristics of the values linked together and these values are studied; it can oppose two antagonistic values such as good and evil, beautiful and ugly, and one can also decide according to what it is possible or impossible to do, etc. Our perceptions and beliefs are based on these criteria:

– Ethics as itself. This philosophical discipline is directly related to the concepts of good and right, all included and conveyed in theories of social justice. It is then possible to evaluate and give a judgment to a conduct or a behavior; it is followed by a thinking on which morality will try to establish its standards and norms, its limits and duties.

– Aesthetics. It is the science of the beautiful. It is related to sensory perceptions, our physical and psychic senses, etc. It consists of measuring the ‘beautiful’ aspects of the things in nature, or in that which relates to the concept of art. This makes it possible to emphasize a feeling or criticism about a taste or a liking.

– Alethics. It is a question of alethical modal logic: in this logic, the specificities related to what is “true” are modeled by means of several modal elements (for instance: the necessary or the mandatory, the contingent, i.e. the possible and the impossible). These four criteria are themselves interconnected and make it possible to measure the strength, the happening and the applicability of a proposal. We are in the realm of performance (in R&D, we generally use three value criteria based on utility, usefulness and usage).

This brings us to a first comment: to evaluate and measure the quality of good or evil, we have to argue: the arguments used for each of these criteria will be of different types but complementary in nature; these arguments, as said in philosophy, will have a normative value.

As it has often been said, it is always a question of finding a balance between ambivalences: good and evil (which are antagonistic), beauty and ugliness, etc. For example, during the burning of a house, a heroic action can be both ethical and aesthetic: a life could be saved (the good), it is a beautiful event (because we are emotionally affected), and all the more remarkable (alethic) because the rescue was considered as an impossible one.

### **2.6.7. Historical reminders**

The notion of Ethics, then the “good” to which it is related was defined by Plato. More recently, the philosophical works of Scholasticism (the philosophy taught in Universities of the Middle Age), showed that “Good”, “One” and the “TRUE”, formed three transcendental entities.

By definition, the domain of transcendental knowledge refers to all that concerns the conditions about the existence of a concept: they therefore define the conditions of *a priori* knowledge of objects or concepts, that is to say the fundamental properties of this object. Thus, here, we address the three basic properties which must govern the behaviors of a human being.

#### **2.6.7.1. The notion of “Good”**

In the context of ethics, the determination of what is right or wrong can be done within the framework of rules of civility, honor, collective utility, public interest or general interest; sometimes, one can consider a particular priority interest.

On the other hand, with regard to what has been said before, the notion of “Good” or “Evil” is adaptive: their modalities are dialogical and sometimes contradictory, depending on the contexts. What is good in one area may not be in another situation. In this case, we are talking about dilemma or conflicts of interest.

We can quote two other examples, concerning two contradictory (ambivalent) behaviors: egoism and altruism, as required in nature:

1) Let us assume the following extreme case: three flood victims cannot swim and will drown. The strongest among the three (who is selfish) will lean on the heads of others, drown them, but will be able to get out of the water. His two friends are dead; he is saved, but he could ensure the survival of the species.

2) It is winter, near the Canal du Midi, in the evening, near the railway station of Toulouse (in South of France): a cry arises. Listening only to his courage, an altruistic observer throws himself into the canal, swims and brings back to the shore a beggar who was drowning. The old man is saved and the rescuer has always kept silence on this act.

In both cases, we are dealing with ethical decisions. Sometimes, in more complex situations, a same person must, depending on the circumstances, alternate or combine approaches: for instance he has to be selfish, part of the time, then often enough he must be altruistic. How to dictate such a behavior? How to model and process a situation? Simply by appealing to his conscience, to his sense of ethics?

#### *2.6.7.2. The notion of “One”: unicity and singularity*

The “One” designates the first principle from which all existing things emerge, exist and evolve. In philosophy, a prime principle refers to a concept, a force or a dogma, considered as the “fundamental and underpinning cause” of all the other elements.

This implies that everything is a logical consequence of one basic principle. In the theory of complexity, the first principle is the law of power applied to a nonlinear system. In the sciences of materials, we will speak of the germ, for the phenomena of aggregation. In biology, it could be the stem cell, and so on. Physical sciences will involve laws or basic principles that have never been invalidated and that make it possible to build all the other known physical laws that trigger our life.



In religion, God can be regarded as the primary principle of our humanity, the *sine qua non* condition of the initial order of our world and the existence of all the beings who have emerged following a complex process of successive assemblies.

### 2.6.7.3. *The notion of “Truth”*

The truth (from the Latin *veritas*, derived from “true”) is defined as the correspondence between a proposition and the reality to which this proposition refers.

What is called a proposition is what in a statement is likely to be kept during an interpretation or perception and which will receive a value of truth (true or false). In mathematics, this is called an assertion: It is true or false by nature. It is an initial fact that one does not demonstrate.

This definition of truth is not unique; there are many others, relevant to many different approaches. We can quote:

– Coherentism is the set of theories defining truth as a systematic coherence relationship, in a theory composed of multiple statements. The wording is considered as ‘true’ only if it is part of a consistent system of several statements.

– Pragmatism is the set of theories and methods defining truth as the property of a belief that is considered satisfactory at the end of a study.

Constructivism is the set of theories according to which truth is the product of a contingent social construct. From a scientific point of view, it is not always possible to demonstrate a phenomenon because it can be complicated or complex, that is to say: it cannot be modeled. Even in such cases, however, it is possible to show that a statement or a proposition is true.

This occurs when one can validate a hypothesis following simulations, experiments, or analyzing consistent observations. Based on the above principles, it is possible to have a bundle of presumptions: this leads to certainties or convictions.

It is this kind of approach that is used in pattern recognition, pattern matching or probabilistic reasoning. In the field of artificial intelligence, the cognitive machines that are used proceed in the same way: deep learning and comparison of a set of symptoms with hundreds of thousands of self-learned diagnosis. It is thus possible, following a problem, to propose a quite “TRUE” solution, associated with a calculated plausibility coefficient. This is what the IBM WATSON machine does.

In 1853, philosopher Victor Cousin published a book entitled: “Du vrai, du beau et du bien”; he founded the modern eclecticism: to discover how something is “true”, this philosophy pushes for the existence of three basic components that are as follows: sensation, reason and feeling. These properties are interconnected, and then interdependent. What is applicable to ethics can be extended to the idea of God, which is the absolute truth, a perfect beauty and the right providence.

### ***2.6.8. The quality of justice and truth: modeling approach***

In this section, we will develop some techniques we can use for measuring, evaluating and validating the notions of truth.

We can use cognitive modeling relevant to decision-making (here, we address the problems relevant to the evaluation, validation and utility theories). For this purpose, the methodology to be implemented is based on Modal Logic. It is a logic often used in decision-making. It formalizes one or more modal elements (or variables), allowing the description and specification of qualities and properties relevant to the TRUTH. A proposition like “It is raining” can be preceded by a plausible modality as defined below:

- It is necessary for it to rain.
- Tomorrow it will be raining.
- Christopher Columbus believes it is raining.
- It is shown that it is raining.
- It is mandatory that it rains.

In an alethic modal logic (either Aristotelian or classical), four modalities can be issued and modeled from the above propositions. They are based on the concept “True”:

– necessary (which indicates something that cannot be true). E.g. it is not possible that the students did not work... ; it is necessary that the pupils do not work.

– contingent (which points out an event that may be true or false), e.g. it is not necessary for students to work.

– possible (anything that can be, except impossible), e.g. it is necessary that students do not work.

– impossible (identify an event that cannot not be false), e.g. it is not possible for students to work.

COMMENTS.– These four linguistic modalities are related together. It is enough to get one of them, then to deduce and define the other three. Similarly, a “necessary statement” cannot be false without implying a contradiction; a *contrario* of a contingent proposition which may imply a contradiction.

In fact, in Ethics, we use the same concepts as those used in Information Systems. To get “true” information, we will look at its consistency: it is necessary for it to possess some characteristics such as: unicity (The “ONE” of the philosophers), non-redundancy, non-contradictory and completeness.

The deontic logic, also from the Greek origin, makes it possible to measure the quality of “truth” through four modal variables that are related to the notion of “duty”.

The relationships between the four characteristics of a law can be modeled and referred to four characteristics such as follows: obligation (or mandatory), prohibition (forbidden), permission (allowed or approved) and optional (or discretionary). The list of these following deontic codes (moral and duty-related) can be used. A similar architectural model is defined and can be compared to the previous one:

- Mandatory, rated O
- Prohibited, rated I

- Allowed, denoted P
- Optional, denoted F

It was the German philosopher and mathematician Gottfried Wilhelm Leibniz in 1670 who first proposed the application of the modal logic to morality and ethics (at that time, the problems of semantics were not fully and correctly handled): during his observations, he noticed the following analogy: “the mandatory” (deontic modality) is what it is necessary (alethic modality) to be carried out by a so-called “good man”. Thus, he proposed the following correspondences:

- What is right, and allowed, is what a ‘good’ man will possibly do.
- The unfair, inequitable or forbidden is what it is impossible for a good man to do.
- The fair, the mandatory is what it is necessary for a good man to do.
- The optional is what is contingent on the good man to do.

This approach, enhanced in the 1950s thanks mainly to the work of the Finnish philosopher Georg Henrik Von Wright (Deontic Logic, 1951), is now well-developed. He resumed the correspondence noted by Leibniz in the 17th Century and modeled, thanks to the recent advances in modal logic. Much more recently, thanks to the work of John Sowa (IBM Research) the advances in KBS [MAS 15b] and the implementation of new advances in semantics, and in particular, in the world of possibilities and plausibilities, have encouraged the development of deontic logic.

Presently, we are not aware of decision support systems (DSSs) integrating the notions of Ethics in the area of “Decision Making Processes”.

## **2.7. Practical ethics: the four-way test and The Rotary**

This is a reminder, within the framework of the book, of how ethics is handled and implemented in The Rotary. Here we consider a human-centered approach, within a not-automated environment (without using any cognitive robot or KBS).

According to its official statutes, The Rotary aims at developing and deploying the ideal of service to which every profession may aspire. More particularly, everybody is committed to:

- 1) use relationships and contacts to serve the public interest;
- 2) to observe rules of high probity in the exercise of any profession; recognize the dignity of any useful occupation; to consider the profession of each Rotarian as a vehicle for action in the service of the society;
- 3) apply the ideal of serving in private, professional and public life;
- 4) advancing the understanding among people, development of altruism, peace and respect through friendly relationships among members of the professions and organizations, all together sharing the ideal of serving.

Within this framework, the Rotary International has developed a code of ethics to enable each member to behave more effectively in a fuzzy and uncertain environment where, depending on the circumstances, rules of morality and deontology cannot be applied.

According to the Four-Way test page of Wikipedia: “In the early 1930s, Herbert Taylor set out to save the Club Aluminum Products distribution company from bankruptcy. He believed himself to be the only person in the company with 250 employees who had hope. His recovery plan started with changing the ethical climate of the company. He explained:

‘The first job was to set policies for the company that would reflect the high ethics and morals God would want in any business. If the people who worked for Club Aluminum were to think right, I knew they would do right. What we needed was a simple, easily remembered guide to right conduct – a sort of ethical yardstick – which all of us in the company could memorize and apply to what we thought, said and did.

I searched through many books for the answer to our need, but the right phrases eluded me, so I did what I often do when I have a problem I can’t answer myself: I turn to the One who has all the answers. I leaned over my desk, rested my head in my hands and prayed. After a few moments,

I looked up and reached for a white paper card. Then I wrote down the twenty-four words that had come to me:

- Is it the truth?
- Is it fair to all concerned?
- Will it build goodwill and better friendships?
- Will it be beneficial to all concerned?

I called it “The Four-Way Test” of the things we think, say or do.”<sup>2</sup>

### ***2.7.1. Implementation of the four-way test by The Rotary***

This same Wikipedia page also explains: “In the 1940s, when Taylor was an international director of Rotary, he offered the Four-Way Test to the organization, and it was adopted by The Rotary for its internal and promotional use. Never changed, the twenty four word test remains today a central part of the permanent Rotary structure throughout the world, and is held as the standard by which all behavior should be measured. The test has been promoted around the world and is used in myriad forms to encourage personal and business ethical practices. Taylor gave Rotary International the right to use the test in the 1940s and the copyright in 1954. He retained the rights to use the test for himself, his Club Aluminum Company and the Christian Workers Foundation”.

An in-depth analysis of the four questions shows that each of them can give part of the overall answer in terms of Ethics, Aesthetics and Alethics.

And then, it is a very consistent (in terms of completion, redundancies, unicity and contradictions) and useful set of guidance that we can apply in our daily activity.

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<sup>2</sup> [https://en.wikipedia.org/wiki/The\\_Four-Way\\_Test](https://en.wikipedia.org/wiki/The_Four-Way_Test)

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## Why Ethics? Behavior Between Convictions and Responsibilities

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### 3.1. Evolution: the role of antagonisms

One cannot speak of ethics by ignoring some notions of evolution. In nature, and this has often been recalled [MAS 06a, MAS 06b, MAS 15a], evolution is an irreversible phenomenon: we cannot approach the problem of complexity, the problem of evolution and the problem of ethics without considering antagonisms. If we refer to the works of Weber, Hottois or Autès, we can say that business ethics is structured in two types: the ethics of conviction and the ethics of responsibility. The presence of ambivalence is necessary in any complex system to attain equilibrium, as we will see in Chapter 12.

In this chapter, we will just address two aspects of ambivalence. We say that ambivalences are necessary in a sustainable system; this is because, in nature, when a system is faced with a disturbance, among two or three ambivalent solutions, the most appropriate alternative will be selected by nature to ensure the resilience of the system. Based on this fact, the species can be saved and the evolution continues. Knowing that these concepts are commonly accepted, we will describe them quickly and highlight some of their characteristics in the light of current economic, political and social considerations.

In fact, the objective of this chapter is to have a preview of what is ambivalence (through ethics of responsibility and ethics of conviction) and then to introduce the background of the complexity of a system (applied to these types of ethics). Thus, this chapter will allow us to better understand the remaining parts of the book.

### **3.2. At the beginning: problems of scientific ethics**

In the following, we will take some well-known examples in bioethics: here, consciousness concerns are directed at scientists who are at the origin of major scientific advances. It is a frequent case study that always involves important discussions and media coverage, often leading to questionable results. This is what happened and we can explain with the following examples: the context of advances in science (development of the nuclear atomic bomb), the development of new therapies, the cloning of living beings (plants, organs, etc.) or genetic handling (DNA modification).

In the field of advanced electronic technologies (new electromagnetic equipment such as RFIDs or various IoT devices) or in biology (DNA and GMOs), scientists are often concerned about future uncertainties, or consequences that are unpredictable, harmful or dangerous for the future evolution of mankind [HOT 96].

Similar concerns arise when taking into account the biophysical risks linked to the experiments and the uncontrolled dissemination of the products used during these experiments. These questions are mainly related to the responsibility of scientists for the physical consequences of their action, the dangerousness of experiments, the implementation (or not) of audits and control structures responsible for the application of quality, safety and security rules, the difficulty in assessing possible hazards, etc.

This approach therefore focuses on a better characterization, evaluation and measurement of the risks, on the need to continually review the above rules to be followed so that their severity remains well-balanced and adjusted to the dangers actually incurred. Nevertheless, as soon as a doubt persists or if we have suspicions regarding the sustainability of the process, we have to put forward the precautionary principle (now part of the French legislation): this allows the freezing of some current experiments, to delay risky activities,



etc. We saw it recently with the Air travel disruption, for several days, after the 2010 Eyjafjallajökull volcano eruption, in Iceland.

Such decisions relevant to the precautionary principle are, moreover, very convenient: it is always easy to take because it allows economic or political leaders not to take risks, and thus to protect themselves if such an event occurs: especially when we do not know how it can be controlled, measured or evaluated.

### **3.3. Ethics: notions of responsibility and conviction**

This leads us to introduce a new approach to ethics by distinguishing ethics from responsibility and ethics from conviction: this distinction concerns questions of policies and politics, of techno-scientific rationality, of economic, human and social considerations, everywhere in our World. We are in agreement with what The Rotary is doing when it considers, in the area of vocational services, different visions and concepts according to the environment and the situations of our World. We can also mention the German sociologist Max Weber: he made such a differentiation during two lectures, “Science as a profession and a vocation” and “Politics as a vocation and a profession”, pronounced in 1919 in Munich [ARO 67, WEY 72]. How can we characterize these two types of ethics?

#### **3.3.1. Ethics of responsibility**

Ethics of responsibility belongs to a teleological rationality; this ethics is rational and compared to an end we intend to reach. It is a goal that is pursued by the one who acts (or decides) and which he has defined or at least clearly adopted.

The ethics of responsibility is characterized by focusing on means and resources, from a double perspective:

- with regard to their practical efficiency, and their operative effectiveness (this is the end that justifies the means) on one hand;
- with regard to the consequences, on the other hand.

The concern for efficiency and effectiveness encourages pragmatism, argumentations, compromises, which is a tendency to readjust means and ends according to the variations of the actions or decisions, and to redraw the contours and outlines of the goal.

Within this framework, Pr. Weber sometimes speaks of “ethics of success” or “ethics of adaptation to the possible”. The drift, always threatening, is due to some opportunism, which preferably chooses goals that are surely attainable, or have to be adjusted to the reality.

A great care has to be taken with the consequences of the interactions between the means and resources used and the general consequences of the undertaken actions that are carried out up to the end.

It is this way of working associated with its operational process, which characterizes the ethics of responsibility.

But there are always consequences and they could be counterproductive to a desire or an intended purpose. And so, they could be harmful to other purposes deemed important or about certain values to be fulfilled. Here we just have to notice that in any complex system, several antagonistic inputs are necessary to attain equilibrium. And then, when the steady state (or the attractor) is reached, the results are always partly good and partly wrong. Nothing in nature is never good or evil, everything is both good and evil: the evaluation of a result is a question of rating or probability, within a given target.

A recent example may reinforce this vision, with the Goldman Sachs case study. Let us start with Henry Paulson. He was Secretary of the US Treasury from July 3, 2006 to January 20, 2009. He was also President of Goldman Sachs between 1999 and 2006. Convenient, right? Ethical evolution of career?

While he was at the head of Goldman, he helped in creating the subprime mortgage bubble. In terms of business: at the top of the bubble in 2005, Goldman Sachs employees earned an average of \$520,000 per year (about 58 times the European minimum wage). Paulson himself earned \$38 million that year. And then the subprime debt exploded ... causing a chain reaction in the world of finance that erased the equivalent of \$30 trillion in assets. Technically speaking, this is not a surprise: any complex system, because of

its nonlinear dynamicity (nonlinear dynamic systems) may overreact and converge toward a non-predictable status. The attractor can be a deterministic chaos and the system becomes uncontrollable.

One solution consisted of “selling” credit derivatives mingled with part of the debt. This is equivalent to selling subprime debt to his customers – including hospitals, universities and pension funds – and Goldman used its own money to bet against this debt. It is the same as if we sell a car full of major or hazardous defects to an old lady, then take out a life insurance policy on her.

Later, when one of Goldman’s bets went wrong (AIG), Paulson stepped in from his position as US Treasury Secretary, and put in place a \$85 billion bailout for the bank as part of “an even larger global rescue plan”, \$700 billion. Goldman came out richer and more powerful than ever.

NOTE.– The care we have to assign to the analysis of possible consequences implies taking into account the effects of an action in its various aspects and also with regard to all stakeholders. Ethics of responsibility is extroverted in the sense that it is implied about the real consequences an action may have on others.

But, in order to take into account the consequences, it is necessary to plan them. Thus, an essential component of the ethics of responsibility is the ability to predict the effects of the actions undertaken and the means to be used. This remains valid at the level of principles and theory, indeed [MAS 06a, MAS 06b] we bathe in complex systems and prediction in economics, as in the society, is an unreal notion or at least often unrealizable. This is the reason why, instead of trying to perform a prediction or a plan (that will be wrong), it will be best to define what kind of event could occur and what type of possible consequences we will have: this is this kind of “anticipation” that we have to implement.

### **3.3.2. Ethics of conviction**

The ethics of responsibility, which is very rational, cannot be disconnected from the emotional aspect, which is involved in the so-called ethics of convictions. Ethics of convictions is based on axiological rationality: it cares exclusively not to reject a value, not to transgress a norm (for example, truth and always tell the truth, goodness and never use force,

etc.). It is not irrational, since it aims at remaining in a perfect consistence with a conviction, whatever the context. From an internal point of view, reality is not the physical subject matter reality but the reality of timeless and intangible values, which must be satisfied whatever its possible material consequences may be. The ethics of conviction is not only an “ideal”, in the negative sense of the term, but a “substantial idealism”. The ethics of conviction requires an absolute involvement of our means and capabilities, whatever the expected consequences may be. It is therefore not efficiency (as a value) that is of key importance, but the fact of having tried and made an action.

The decision maker does not have to worry about the consequences, provided his intentions are pure. He is just responsible for this last one, for the goodness of his will, the rest (in terms of impacts) being matters of chance or providence. Only the general interest, the respect of a greater value and the follow-up of major rules of goodness are taken into account; they sometimes collide with the realities of life: they may have harmful effects or consequences at the level of the whole system under study.

Ethics of conviction could be the kind of ethics used by politicians or religious people, while the ethics of responsibility would be used more by scientists.

We have often referred to the concepts of systems evolution in nature [MAS 06a, MAS 06b] and pointed out the fact that any system follows a trajectory that converges toward an attractor; it may be simple or strange, but its final value and final characteristics can never be foreseen.

What is also sure is that Moore’s law is a general law that always leads to a “catastrophe” (in the sense of Thom’s theory) or to a disruption (in the sense of the complex systems theory).

Some philosophers tend to link ethics of conviction with millenarianism: it is based on the planned apocalyptic destruction of the world, which must lead to the emergence of another world. This is equivalent to a catastrophe in complex systems. Thus, it is right in substance but not in form because of the NLDS properties of the universe and the non-predictability of uncertain future events. And so, we are faced with the “ethical irrationality of the world” (as if we were to say: good engenders evil, and vice versa). It is a possibility, since our world is based on dialogism then plausibility. Keeping

back some examples given in previous chapters, we can state that the current world is often evolving linearly, even cyclically, with a succession of antinomic steps. For example, concerning selfishness and altruism, a person may be tempted to use the ultimate radical violence to sweep away evil, save the species, and finally obtain a better world that good intents will no longer be able to transform again into a hell. And then, following some deviations and diversifications, one may return to an opposite initial state.

In fact, good and evil are always present simultaneously in the feedback loops of our real systems. They are even entangled with other loops and act as very complex systems. There is no periodic alternation between two states (good and bad) but a quantic move through a disruption, between one of these two unpredictable states to another, in an unpredictable way, overtime.

Given these notions of complexity, we do not have the ability to predict and act effectively in a system. We can, however, change the “path” of these evolutions and behaviors because all stakeholders, or agents, are interacting: consequently, the system is subject to SIC (Sensitivity to Initial Conditions), which will play an essential role in terms of uncertainty and hazard. Thus, one who practices the ethics of conviction, possesses some charisma and who puts forward his good faith can have a considerable influence on the evolution and the future behavior of a social system. The ethics of conviction is not, in principle, intended for sciences. Indeed, every scientist must unconditionally respect the value assigned to sciences: “truth”. Here, we are in the field of basic research or development. But the use of truth and the exploitation of results issued from scientific progress are embedded in the final application of system functions. They are then depending on integration operations in which economic, industrial and societal purposes are involved. The main ethical concern we may raise is to analyze the role and mission of a scientist within the context of the society, at a given time, with some pre-defined constraints, and to see if these constraints are compatible with the activities he is conducting within the framework of his profession. This debate is not developed here: the only element we can highlight is that a scientist is a human being: he can, according to his consciousness, find compromises or take positions and decisions compatible with his jobs and duties.

### 3.3.3. *Ethics: main consequences*

With regard to the existence of the two types of ethics, the following points should be recalled since we are faced with a holistic problem:

1) The above ethical profiles are often accentuated to highlight their main features. However, they are complementary and coexist in human beings. Their combination is dynamic and, depending on the circumstances and the context, they will express themselves with varying degrees of strength in order to optimize a global and common interest. In terms of outcome, they may also have an influence in the change of behavior, at a personal or population level. ... as can be seen in any complex system. And so, issuing an *a priori* opinion about the character, or the attitude of an individual, is risky and may lead to an error.

2) In any complex system (principle of feedback loop and interactions), it is important to have antinomic action-reaction monitoring systems. In terms of decision-making, this will lead to nonlinear and multi-criteria models, which make choices and decisions both difficult and unpredictable. Hence our message that is often addressed to decision makers is as follows: we must act in the most optimal way (most of the time, search for local optimum and non-global optimum), act in soul and consciousness (there are the subjective and the intuitive parts of a decision) ... according to what we think about our duty, then leaving to God for the follow-on.

3) All this process requires implementation of the right conditions and it is necessary for the organization to be reactive and/or adaptive accordingly, in order to react as soon as possible, to random disturbances or to unplanned and uncertain situations.

4) In most companies, it is said that the system management must follow the following rule. Think Global, Act Local. For many reasons, this statement has become obsolete.

Indeed, management of a complex system requires having a holistic approach. And then, the global objectives and tactics are pre-defined, as well as the holonic architecture, associated with a given framework. Then when a problem occurs, the priority, at the operational level will change and become: "think local and realize global". It is a paradigm change: since tactics are predefined, and emergence put into evidence, we only have to define, adjust and control the local strategies, then to apply them, taking into account the global evolution of the system as a whole.... like in a colony of

ants where local interactions (local strategies) lead to the emergence of a global order that ants ignore.

It will be the same with ethics: we first have to apply and act for ethics at our individual level, before giving instructions and guidance at a higher level.... whatever the type of ethics we consider and implement may be.

5) Ethics of Naturalism. At the beginning of the 1870's, Nietzsche [NIE 73] felt the need to refine the existing notions of ethics. He then introduced the notion of "ethics of naturalism". This notion is all the more necessary (as will be seen in Chapter 12) since the complexity of our body has not yet been taken into account.

In our body, as we will see, all of our organs (brain, digestive systems, heart, etc.) are interacting together: when our body changes over time, when physiological-psychological changes appear in our organs, an affect asserts itself, pushes us to action or decision, while others are discarded. For example, when someone acts courageously, the affect courage is activated and reinforced. At the same time, its opposite, the cowardly affect, is weakened.

The state of our guts gives another meaning and context to our feelings, emotions and interpretations. For example, the condition of the duodenum possesses aphrodisiac virtues on words and our way of thinking. In modeling a situation, the small intestine plays an important role. For syntax errors, our concentration level, the fact of being methodic or not, here the colon intervenes. The whole set of organs is self-organizing, but has an impact on the notion of ethics, how to use it, and how to implement it.

For these above physiological reasons, ethics is now defined as using three components (instead of two): ethics of responsibility, ethics of conviction, ethics of naturalism. (This is in keeping with the notions of the three brains that are within us).

### **3.4. Ethics and the social positioning of the people**

If we consider not socio-professional categories but sociological or anthropological groups in society, we can bring to light an additional and interesting phenomenon concerning the "ethical" approaches at an individual level.

In a simple way, the population can be divided into four categories:

– COCOs (Collective and Concrete) is the group of people aged over 60 years. This category is less active in the society has a limited influence and will be discarded from the present study.

– YOYOs (Young YObbos) includes young people aged between 15 and 28 years of age and is a separate class, and not a major one in the society. It will also be excluded from our present study, since we will address it in a separate chapter (millennials).

– BOBOs. These “*BOurgeois –BOhème*” (concept defined by David Brooks, journalists at the New York Times in 2000) are often 40- to 50-year-old decision makers. They are false rebels, relatively wealthy and are actively involved in the society.

– MOMOs (MOBiles and MORals), between 30 and 40 years of age, are marked by the protection of nature and the environment, and they give the momentum to new trends in terms of consumption and sustainable development. They are not ‘ecologists’ strongly involved in politics and act more by conviction; they are involved in the supply of organic, ethical and stripped products, in the sense that only essential and sufficient functionalities are considered (as in value-added theory).

In this context, it should be noted that activities or missions covered by individuals are of two types:

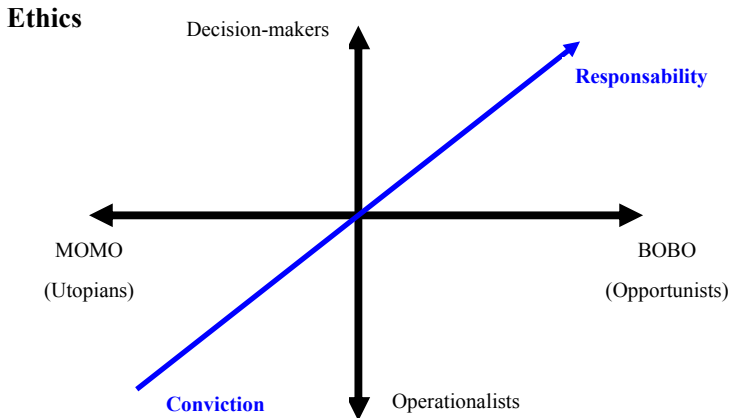
– management, monitoring and control of the operations, decision-making;

– the execution or fulfillment of tasks, i.e. all the operational activities.

Given the information collected in the various technical studies quoted in reference of this book, it is possible to show how the two forms of ethics can be positioned. Hence, the following scheme offers the advantage of freeing oneself from the constraints linked to the belonging of individuals in the classes of the society (classes that may be political, economic, technological, human, social, etc.). This proposition comes from the fact that today, to be a member in a political party, for example, is more a matter of fashion or of an opportunistic approach than of a profound conviction and belief. In contrast, the younger generations are more tempted by experience, a quality of life, because of the evolution of the society and, for many reasons which we shall not explain here, they demonstrate more individualism,



egocentrism and selfishness. It is only in the case of stress, a singularity or a “catastrophe” that other antagonistic qualities (such as solidarity, generosity or mutual help) take over. This is what we observed; moreover, during the deadly earthquake that hit Haïti, on January 12, 2010: moreover, we could observe self-organization mechanisms, with the emergence of clusters that are well-organized and managed for monitoring local crisis.



**Figure 3.1.** *Notions of ethics according to different types of populations*

In the above graph, we can see how populations of workers can use notions of ethics (responsibility and conviction) according to their specificity and profile.

A third kind of use of the ethics (which is a combination of the two aforementioned methods) consists, in fact, in using at the same time either the rational or emotional properties of ethics. This conducts in introducing a new type of management style called benevolent management.

### 3.5. Benevolent management

#### 3.5.1. Introduction

When talking about business ethics in a company, many people are first careful with the work organization of their company and the way of working. Indeed, they consider that their role is as important as the one of the management to ensure the sustainability and the development of the company.

Above, we have introduced two types of ethics based either on responsibility or duty and either on conviction or beliefs. Here, we combine at the same time the physical and emotional aspects of the human body.

Now, to improve even further, what are the next components and success factors, linked to ethics, that we could implement to increase the efficiency and effectiveness of the company?

### **3.5.2. What do employees require?**

#### **3.5.2.1. Ethics: the first priority is to go toward an inclusive company**

Here, we suppose that people and employees are educated, i.e. skilled. When involved in a project, employees need to share information since we cannot be autonomous or efficient if we are not kept informed.

It is fundamental too for economic, strategic or organizational reasons, not to stop a project. It is then necessary to inform and explain the reasons for each decision taken in order to gain confidence, motivation and involvement of any people.

These are the keys to success for making the collective and collaborative work efficient, to avoid any rumors, to cope together with difficult situations and to recover from them.

#### **3.5.2.2. Ethics: a competitiveness tool**

In fact, ethics is a matter of creating the virtuous circle between relational ethics and economic efficiency. Ethics enables creating a sense of belonging through the real consistence generated between the action and discourse.

In parallel, as we will see in the next chapter, ethics will enable to put in place an anti-stress management model; because ethics consists of managing people as we would like to be managed ourselves.

### **3.5.3. Some definitions**

Benevolent management is a new way of conducting business, to give meaning to the work to be done, and to face the more and more ubiquitous systems and projects development, and then P2P systems.

Within this context, we have to change our conventional management methods and to promote productivity, rely on the exchange of directives and notices, rather than delegation, suggest autonomy and “Completed Staff Work” (CSW), to, finally, improve well-being at work.

### **3.5.3.1. *Some characteristics***

For a lot of managers, benevolent management possesses many qualities and capabilities to cover the new management challenges, but the term is still somewhat vague. However, benevolent management is a way of looking at and collaborating with its employees, based on respect, trust and listening.

As for ethics, it is “a disposition of mind”, an attitude which aims at the understanding and the happiness of each one. What are the impacts of this search for well-being and understanding on the global interests of the company?

## **3.6. Understanding benevolent management**

The managers who are convinced by such a management systems think that a lot of ethics is embedded in its process.

This benevolence can be applied to human resources, but as an extension to a whole company, or at the service of an objective. Here, benevolence is not a conventional top-down management system but an active and self-generating process since it involves the self-capabilities of each one and enables to foster the individual efficiency and then to achieve a goal, without stress.

### **3.6.1. *Methodology***

The basic principles about benevolent management are as follows:

1) Instead of focusing on our egos, we have to leave them aside to focus on the end goals.

2) Empathy contributes to the respect of others, but is also a way to give a positive look on the things, even in adversity, and to push people in increasing their know-how. It also enables giving confidence to the employees, to encourage and congratulate them each time it is necessary.

3) Everybody is allowed to take initiatives and has the right to err. Thus, criticism, negative comments, sarcasms and sneers are not accepted in team work.

4) In the event of disturbances or conflicts, cooperation must take precedence over the competition; finding compromises is more important than managing with authority and this has to be done in the interests of all.

As a result, the benevolent manager does not lose authority. He is not a leader (which is associated with a conventional management), but he is rather a coach and the employees more often require benevolence rather than leadership. It is a question of physical and psychological equilibria.

Since it is more respectful and less stressful, benevolent management will also require a greater vigilance to understand, perceive and satisfy the expectations of each one.

### **3.6.2. Conclusions**

The goal of benevolent management is to integrate more ethics rules in the management practices.

What is expected, in return, is of key importance: a maximum of autonomy and recognition to the employees, to place more emphasis on employees while offering them more confidence, listening and responsibilities.

This way, employees will be less stressed and more rewarded: it is a positive state of mind, which fosters creativity, productivity and therefore, the development of the company. In addition, with a better motivation and commitment, people are less subject to absenteeism.

Thus, benevolent management can be considered as a new way in embedding ethics in modern management. This is the kind of Management style that was taught within IBM-France, during the 1980s: it was called “creative management” and is based on same values and approaches. As we can see, for marketing purpose and to achieve a better efficiency, it is sometimes necessary to refresh the look of technology in a more fashionable way.

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## Perception of Ethics in Life and Society

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### 4.1. Introduction

The objective of this chapter is to collect information about some views, concepts, status and examples in a variety of areas (economic, political, religious, technical, social and societal). This will allow us to make a synthesis of such uses, philosophies, concepts and practices and elaborate a more pertinent science of ethics. We will certainly take into consideration the theoretical concepts and points of views but it is urgent to have a complete panel of what everybody think about ethics and to find the best possible compromise.

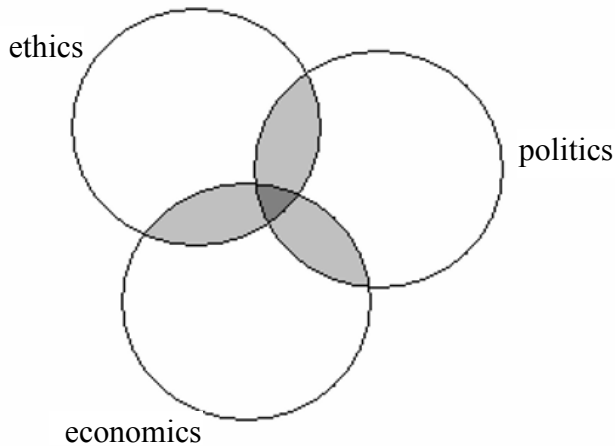
### 4.2. Positioning of ethics in society and politics

In order to avoid any moralistic approach to the problem of ethics, nor to make suppositions about the rank of precedence between ethics and politics, the best way is to draw a Venn diagram showing the relationship between ethics, politics and economics.

The intersection of the two circles, that of ethics and politics, enables the emergence of some common properties. However, it is better to consider the intersection of three circles: economics, politics and ethics. In fact, the comparison between economics and ethics is a mean to specify politics in order, in a second step, to better confront it with ethics.

For it is known that politics always raises its own problems and difficulties which cannot be reduced to economic phenomena. This is why their relationships with ethics are not common and must be clarified [RIC 07].

In the following figure, there are three circles intersecting with common areas, two to two and three to three.



**Figure 4.1.** Theoretical analysis of the interaction of ethics, economics and politics

Max Weber [AUT 04] provided us with complete “on-the-job” concepts such as “ethics of conviction” or “ethics of responsibility”. Upstream of these formulae, there is a kind of metaphysics which emerges implicitly and make us question ourselves on what appeared to us as *a priori* evident. In Chapter 8, we will develop the notions of ethics and spirituality but here we will only provide some information about the “ethics of responsibility”. The ethics of responsibility will be defined according to the theoretical rule: “we must answer the foreseeable consequences of our actions”; but constructing an analysis from a unique concept is inconsistent and not satisfactory, as it masks moral and normative aspects of the definition.

Trying to explain the boundaries of Weber's wide world enables the opening of the horizons of the analysis. Thus, a proper understanding requires us to consider the question of ethics in politics and then inquire about the links existing with global ethics and ethics in the economy.

Here, we will mention the work of Pierre Bourdieu on the notion of fields related to ethics and that of Jurgen Habermas on the notion of "public space", in order to better analyze the political situation in Leipzig [AUT 04].

### **4.3. Ethics and scientists (in a rational and reductionist world)**

What about the sciences in the context of ethics?

First, the scientist, being neither a person of action nor a politician, most of the time feels the need to rely on an ethics of responsibility.

Second, science and technology interfere at two levels of responsibility: (1) the determination of the most effective means and solutions and (2) the prediction of consequences. To this end, one who must make a decision of responsibility – the politician – will call on scientific experts.

Third, science and technology are considered as means and tools, among others, to achieve the ultimate goal: the perpetuation and power of a State.

Anyway, the sciences are not identified as the dominant source of power through their technological superiority.

### **4.4. Cultural and social considerations related to the Internet**

The development of networks such as the Internet has fostered and deployed such phenomena as people's sensitivity and ability to conduct businesses and notions of morality and ethics in business. Moreover, networks allow the essential mechanisms of emergence and self-organization to federate and galvanize ideas and opinions, generate behaviors and reduce, to some extent, inclusiveness.

#### **4.4.1. Loyalty, trust and devotion toward a profession or one's employer [MAS 08]**

In recent times, many “professional” social exchange networks have emerged. Their effects are numerous and varied:

– Thanks to their affinities, the members of such networks have opportunities to exchange technical information and experiences (sometimes confidential) as would be done in a competence center.

– The notion of “corporation” takes precedence over that of “corporate culture” in the sense that members are experts in a given professional area who know and recognize themselves within a vocational community and who are dedicated to it unconditionally.

– When a change occurs (career evolution, personal development, job search, etc.), it is through this network of friends that the expert will find advice, support and hiring opportunities rather than with his/her hierarchy or human resource development framework.

Nowadays, information systems offer an incomparable capacity for communication and we are faced with the notion of utility [PIC 08]: this consists of collecting, sorting, selecting or rejecting some opportunities of functionality that bring to the Web user advantages, benefits, pleasure, luck, wealth or “fortune”; therefore, a satisfaction toward his/her personal objectives within the framework, or to the detriment, of a general interest.

It is important to define the right compromises. Indeed, as such an approach is often based on the exclusive use of the Internet inside a given corporation, it will inevitably tend to develop individualism and a search for personal satisfaction. It is in this sense that social networks would be considered a tool of exclusivity.

#### **4.4.2. Problems of ambition and ideals in a company [BNE 08]**

Young employees, and more generally those of the rising generation, have disruptive needs compared to those already in place. Indeed, their expectations are precise and significant: some want or do not want to work



in delayed or lagged schedules, others consider that lack of experience or skills is not an argument to justify earning less money and finally some want to work in a motivating atmosphere and want to ensure only interesting tasks. These phenomena are spreading in our society and are often associated with new notions of utility and pleasure. In terms of information systems, there is therefore a gap between the objectives as formulated by management and the expectations of most parts of the population. Consequences are easy to understand: we are witnessing the segmentation of a company (same as for a society that is clustered); it is based on extra-professional links between colleagues, groups of skills, classes of people and so on. This represents unusual forces of negotiation, mainly oriented to protecting privileges and to class action.

The question is therefore how to control such phenomena. The answer is focused on the analysis of interactions and the identification of those having an aggregating power. The objective is to strengthen the links and attitudes that bring people and their interactions together and this must be done within the framework of a global approach:

- This concerns job contracts as we are talking about expectations as well as commitments. It also implies knowing how to establish a climate of confidence between an employee and the company and to obtain more initiative and reactivity from everyone.

- When it comes to extra-professional or interprofessional relationships, the question is of the boundary between the interests of the enterprise and the suitability or individual interests of the employees. We are living in a fuzzy, indefinable and non-predictable world: codes of value and measurement methods to exploit such independent but useful skills for the business do not exist.

- In such systems, it is neither the potentialities nor the desires or the evolutionary trends of the people that are questioned, but the intrinsic qualities of the information systems as well as the organization and management of the company.

Thus, we are faced with problems of ethics and the “well-being” of people. What is of key importance for the architect of an information system is to

distinguish between what is right and wrong, between what is useful and necessary to the company and what is not. This is generally valid and can be applied to any sector of activity.

#### **4.4.3. Altruism and positive societal attitudes**

This section covers the complex notion of “Willingness” [HAW 07]. It is a positive feedback from a part of the society in terms of duties, acknowledgments, the sharing of products and services, contributions to others, fighting against distresses or fulfilling the needs of others. This attitude contributes to the mutual development of a society. In a company, it is called “corporate culture”.

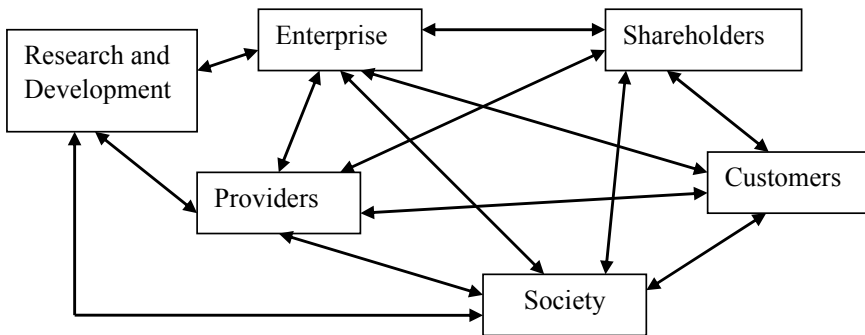
It should be kept in mind [MAS 06b] that, for various reasons, evolution of a society is based on antagonisms: selfishness–altruism, cooperation–competition, aggressiveness–passivity, love–hate, emotion–placidity, sacrifice–crime and so on. We return to notions of humanism! Money and profit are not the only added values of a company: they would lead to incomplete models. To have models progress rapidly, loops of positive and negative feedback are needed in all the above domains.

Thus, the goal of a company in a holonic context within society is to create not only wealth but also activities, employment and well-being [EMA 04]. This does not, in any way, call into question the notion of capitalism! This only redefines the context of a business as not only technical or economic but also social, political and societal.

This is the framework we will consider in Business Ethics.

##### **4.4.3.1. Notions of stakeholders**

In an information system such as the Internet, partners are much more diverse than they were in the past. Moreover, the usual hierarchical or sequential models in economy give way to networked and parallelized models because of existing interactions and interdependencies that are more numerous and influential; this makes the design and operation more complex. To simplify, we have an interrelational graph as follows (Figure 4.2).



**Figure 4.2.** *The world of interactions: from shareholders to stakeholders*

In the above schema, new additional relationships exist between an individual and an enlarged and renewed collective system. This set includes very different actors (called stakeholders). Here, new values are emerging on the basis of the aspiration to make each agent useful and the rediscovery of the virtues of sharing and cooperation rather than competition, and even the integration (while we are in the midst of an economic crisis) of characteristics such as ethics and the environment.

As a result, with social networks we are all included in a more collaborative system, with a new kind of interaction chosen by the stakeholders and not only by the company, in a dynamic and evolving context. We are no longer in procedural information systems but “perceptive–diagnostic–predictive” systems.

#### **4.4.4. Adaptation of the concept of ethics according to the economic context**

The analysis of economic trends and thought shows that information systems have always aimed at making the best possible use of available resources in a given context. Thus, as described by [KLI 07], we are led to either maximize the profits of a company, maximize a value or maximize the

profits of a shareholder. What follows enables us to better understand how business ethics must be handled:

– *Maximizing the profit of an organization.* Historically, this is a healthy approach [JEN 01] and profitable to all. For example, a pharmaceutical laboratory will invest today in order to develop products tomorrow. Given the R & D and operating costs, it will therefore suffer financial losses and have to make subsequent profits to offset them. This cannot be envisioned when the world is uncertain, unknown or unreliable. Not only the distribution of profits but also risk management and their recovery become an essential element of this strategy.

– *Maximizing the value.* Here, the objective is to choose the most relevant investments to ensure a better service to the partners. It is an approach that has proved its worth in cooperative centers (to get the highest possible value at the lowest cost) but it is nevertheless a suboptimal approach, although it allows the company to set a direction to follow.

– *Maximizing the shareholder's profit.* This more recent approach has allowed some Western countries, after the conflicts of the 1970s (addressing energy crises), to attract capital funds and productive investment, thus continuing to maintain high growth rates. On the other hand, any funding has to be remunerated; it is then necessary to ensure attractive income to the contributors through, for example, dividends. This trend, originating in the 1980s, has involved all major Western companies, starting with GE, then GM, IBM and so on. However, the search for profit is mandatorily associated with the notion of risk: the higher the risk, the higher the compensation. After experiencing some deviances in the economy and in the industry, the world of finance, with its excesses, became involved in the subprime problem that affected all of us.

– *The stakeholder's theory.* The term “stakeholder” now supersedes “shareholder”. This leads to a notion of “finality” that is more open and more oriented toward the general interest. It is no longer a matter of maximizing a single criterion but of satisfying several goals with the best possible performance. It is therefore necessary to maximize an overall objective based on a multicriteria model: it involves a wide combination of several criteria interacting together. The problem is working out the distribution of profits and losses between the actors according to these

criteria. To achieve a holistic goal, the global information system has therefore to be reconsidered in terms of its communication tools, cooperative or collaborative applications, its architecture and so on.

#### **4.4.5. Business Ethics: a preamble about some requirements**

Our market economy dates from before the Phoenicians. This economic system has been the least harmful and therefore became irreplaceable. The capitalism on which it is based is a rational one. What raises criticisms, however, is that it is not challenged and that it is not protected against deviances or losses of control in its evolution. In some relatively wealthy countries we are situated at a very specific level of the “Pyramid of Maslow”, where money is regarded as the success factor of an economy.

Nevertheless, while the internal growth rate of an economy is only 3–5% per year, trying to look for a return of 10% or 15% implies having an ROE (Return on Equity) of more than 15% per year; this is a difficulty which is, in addition, not free of plausible economic risks! This can be much more risky when venture capitalists (i.e. Business Angels) are looking for a return in excess of 20% in the hope of making a “tumble” (a kind of financial jump). This implies a focusing of efforts in making sectoral choices such as finance or new technologies: it is a poker game that does not match or follow a rational process. It is difficult to integrate these assumptions into the design of an information system: what are the true assumptions? What are the expected costs and benefits? What type of uncertainty should be controlled and how? Are the phenomena nonlinear? And so on.

All this is summarized in one sentence: we cannot apply conventional design and control approaches to complex systems subject to different “cause–effect” paradigms and integrating various interactions. How can ethics be part of such businesses, how can it be integrated?

#### **4.5. Design of Business Ethics: an overview of different concepts**

Ethics is the emergence of a new field in cognitive systems. It also plays a fundamental role in production systems and has an important and powerful position in ethics committees (such as CCPPRB). It is therefore a battleground for appropriation by many organizations whose intentions

respond to very diverse motivations: the search for truth, social implication, intellectual doctrine, “serving” others, economic interest, cultural interest, new business opportunities and so on. In the following, the aim is to look at a number of approaches to broaden our point of view and to better understand the purposes and hidden sensitivities existing behind the notion of ethics. We will shortly detail how the concepts of ethics are understood in different working sectors.

#### ***4.5.1. Religion, confessional currents and schools of thought***

For the many great religions, ethics is considered as the new name for morality. They have, in this new domain, their traditional message to be conveyed. It is often a kind of ethics of conviction, opposed to the ethics of responsibility: casuistry.

Here, we can show the relationship between religion and Artificial Intelligence: casuistry is similar to what we call Case-Based Reasoning (CBR). Indeed, casuistry is a kind of reasoning used to resolve moral problems by extracting or extending theoretical rules from particular instances and applying these rules to new instances.

Ethics is a quite simple common sense concept: it corresponds only to the guidelines to be followed in a particular case and situation. It could be compared to the follow-up principles of the Catholic casuistry developed by the Jesuits: “It is a period of time for thinking about the conflicts of values and norms”. To be specific, in any morality study case some “conflicts of norms” may appear which can only be solved with a case-by-case assessment (casuistic) implying a lot of practical common sense.

#### ***4.5.2. The philosophers***

Philosophers have a main mission: the definition of “values” as well as the identification and definition of “universal values”. Ethics is one of these values.

Since ethics is traditionally studied by moral philosophy and epistemology, philosophers continue to think about ethics and ethics applied to our common life [AUT 04]. They distinguish:

– *The premoral*. Morality says what is mandatory (according to the Kantian legacy). Ethics represents what is considered as good (according to the Aristotelian legacy).

Ethics is associated with a “good life”: more precisely, the aim of a good life with and for others in institutions and organizations subject to justice. Paul Ricoeur assigned the “term of ethics to all the questioning that comes before the introduction of the concept of morality. By morale, we mean everything that, within the framework of good and evil, refers to laws, norms, standards, imperatives”. It is the discovery of freedom embedded in the action.

– *The ersatz of morality*. Conventional ethics is not able to satisfy the demand of morality. Ethics is best fitted to adjust some individual behaviors. According to Alain Etchegoyen [ETC 90], morality is a universal and compulsory concept but ethics is plural: it is a temporary and transitional agreement for operational people in action.

### **4.5.3. Scientists and physicians**

Approaches in ethics are first issued from and developed from practical field studies. This is done according to analysis methods used in industrial, economic, social and human sciences (sometimes based on medical results). We can consider the following characteristics and specificities related to the role and use of ethics:

– *A research matter*. Morality answers our questions. Ethics is in itself an interrogation and a search for goodness and consciousness and nothing else (according to Christian Hervé).

– *A learning process*. Pragmatic ethics is limited to the “moral of action”. It is also considered as a “small step-by-step search for ethics” [CHA 93, CHA 08]. It is an ethics of responsibility inspired by reality rather than an ethics of conviction or an ideology.

– *The progressive design*. “Ethics is defined as a free and individual demand for the achievements of values, which is the germ and the principle of “moral advances” [DES 04].

#### **4.5.4. Administrative sectors: lawyers and social communities**

Ethics is only a prerequisite, a preliminary jurisprudence, developed by ethics committees which are preparing for the design drafting and voting of a law by the parliament and then decreed by the government. Ethics is therefore an assembly of single and simple rules for life: as soon as there are missing or faulty laws and jurisprudence, ethics will fulfill that gap.

In addition, we will hold that above all, it is in the field of bioethics that notions of ethics are often well known, acknowledged and applied.

#### **4.5.5. Professional ethics framework**

Everyone needs to understand the merits of professional ethics and to act in his or her own way. For example, those at the top of the professional hierarchy should set an example and not take advantage of institutions as in the recent scandals. The problems are of a common sense nature: to only increase one's own salary is a surprising thing (lack of checks and balances); in our society, where everything is known, having an exorbitant salary, sometimes amounting to millions of euros per year, is already shocking for the people who have very low revenues.

Privileged or successful people, in their professional or public life, are fully disconnected from everyday real life. They are incapable of understanding what empathy is and what people's ways of thinking are.

The actors of professional ethics are first of all the individuals but they are also groups of people: teams, work colleagues and so on.

At the level of each team, department and main business function in the company, there must be professional ethics in order to coordinate individuals or (small) groups of people among themselves. It is equally fundamental for each individual or group to work in a non-confrontational and forward-looking manner.



Finally, the actors in professional ethics are also companies and institutions. Their leaders as well as each representative of the company or institution must behave in an impeccable way because our society increasingly mediates and scrutinizes each of their attitudes, gestures, words and speeches: they then have amplified effects and are deviated from their context, meaning and interpretation. Information is permanently biased; interviews and media are often traps, as the journalists issue value judgments instead of explaining facts and values. This task is easier than understanding and is associated with buzz: is it behind such practices that we must look for the cause of this behavior?

Are there not professions that should be more ethical than profitable and yet have almost no ethical prescription in their profession? Why have some associated themselves with this fundamental concept of ethics in their trade while it is forgotten by the majority?

In regards to the media, farmers and even politicians, do we ever ask ourselves basic questions? What proportion of information is really important in newspapers? Is the goal of the food industry to nourish people and thus help to keep the population healthy? What is the objective of our elected officials: do they really wish to govern us in our interest rather than in their own interests despite the recent and continuous fights of their political parties?

In addition, partners, consultants, advisers and mediators are needed to manage conflict and prevent the risk of conflicts or dangers in professional actions. They have to practice and be thoroughly familiar with professional ethics to deepen and regulate it.

Ethics requires constant controls and readjustments to follow the continuous changes in the system to be managed. A legal framework for action and application is already in place in France, starting with the Declaration of the Rights of Man and of the Citizen which is now the basis of our society: it declares that we are all equal in law and dignity.

Such legislation also promotes and disseminates basic principles about human dignity and respect: this already implies a wide number of things, such as the disavowal of the types of discrimination that our society has long been suffering and continues to suffer. For instance, one can still read INSEE studies highlighting the difference in wages between men and

women, harassments in the workplace, unfair career evolutions, conditions of hiring and so on. All of these are illegal, everyone agrees they are abnormal, but these unethical situations still exist.

What is required? Mediators, an increased focus on implementation and more ethics in mentalities.

It is possible to fight against these prohibited behaviors by proposing regulations specific to a framework, a trade, an enterprise and so on. It is necessary, however, to get a general, consistent and harmonious situation agreed by each country: we can remind ourselves, in this example, of the “Services Directive” (issued from the so-called “European Bolkenstein Directive”), the objective of which is to realize the full potential of service markets in Europe by removing legal and administrative barriers to trade. Also, we can mention some worldwide companies (IBM, Ford, GE, etc.) that are ahead of their political institutions: they have their own ethical charter that any employee must accept and apply under penalty of sanctions.

There are currently consulting firms, particularly in the research and development (R&D) industry, who are experts in professional ethics, offering business charters and consultants and advisers to help and assist in decision-making, process reengineering, lean manufacturing, ethics implementation, communication plans, risk assessment and management, codes of professional ethics [BRE 08] and so on.

#### **4.5.6. *The concept of ethics in industry***

In some Anglo-Saxon countries, there is a utilitarian conceptual model called “ethics pays” that is used. Ethics, which has to be considered as a profitable concept, is often put forward at each internal level of the company.

In terms of strategy, the position is as follows:

- one must submit to one’s image (that of the company) because, in the long term, we are reimbursed for our efforts and sacrifices;
- the code of good conduct and associated guidelines must be followed and applied so as to generate respect and trust. This can have direct consequences on income in terms of ROI.

We must establish a “market ethics” (respect for oral and moral commitments, quality satisfaction for the product/service sold, etc.) and a “partnership ethics” (honesty and justice with suppliers and customers, etc.).

When leaders do not fulfill these various rules of ethical commitment, it is difficult to require the same effort from every employee. For these reasons, there is always a strong commitment from the hierarchy to such values: they must act as a “reference model”.

This positive attitude, however, concerns mainly medium and large companies. What about small structures?

It is common to note that the problem is of a different nature in small societies: the objective is to survive or to develop. The dynamics to which they are subject are strong and the values relevant to this concern and need to grow are quite adaptive and flexible, according to an evolving context. Thus, the implementation of concepts around ethics is sometimes well understood but rarely applied.

EXAMPLES.— Let us consider the case study of an enterprise where an auditor (whose role is to make sure that all the tax documents, stocks and inventories are OK) works in order to assess and ensure risk management for the benefit of the shareholders: he has no incentive to take risks *vis-à-vis* his principals or prime contractors and will work with a great rigor.

However, such attitudes are sometimes fueled by the lure of profit: it will have, in the long run and inevitably, an impact on his way of doing business and on his financial claim, and then demands, on the company. As said by a potential member to be recruited into the Rabelais Rotary Club: “we are here to do ‘business’ and not ‘feelings’”. Thus, he was not enlisted.

It should be noted that the money paid for a service has to be equitable, depending on the value and importance of the service fulfilled and not on a cooperation contract whose validity can only evolve on the basis of a situation, the difficulty of the company and the behavior of its managers, employees and shareholders. It is therefore a global approach (holistic) that must be undertaken and in order to find an equilibrium or a compromise (in the sense of the Nash equilibrium).

Unfortunately, in the real world, by analyzing the evolution of companies or societies in trouble, too often we can see the unworthy behaviors of “responsible” people (leaders, managers, executives) who have not only rights but also duties toward their company and their employers or shareholders, as well as (we sometimes forget) employees, partners and interconnected companies.

We never get everything we want. Indeed, some people want to have their cake and eat it, with the smile of the creamer. This is not fair. We are entering the economy of sharing. We are also partly involved in CSR. At last, with the emergence of social networks, each human being feels him/herself as a “responsible individual”, and it is through ethics that he will be able to identify crisis situations and raise and condemn various shocking acts.

## **4.6. Ethics in banking, finance and insurance**

Ethics involves any banking or financial system that consciously embraces economic, environmental and social practices.

Most of these companies try to earn profits through being consistent with their practices. For them, ethics is a broad but specific concept that covers financial actions which provide the grounding for banks to finance the start-up costs for ecologically friendly manufacturers.

### **4.6.1. Ethical banking and greed [REM 12]**

A bank provides a wide variety of services, including managing its clients’ money, facilitating financial transactions, lending money to qualified borrowers and issuing debt securities that are backed by the previously mentioned loans. However, those services are not accessible to everyone.

Banks aim to making profit first and foremost. This means that they try not to take on clients that would cost them too much money. For example, banks do not usually give loans to people whose credit history and income

makes it more likely that they will fall behind and default. They may also be reluctant to provide their services in lower-income neighborhoods and, in the case of international banks, developing countries. The banks are similarly reluctant to lend money to ecologically friendly projects on the ground.

While the primary objective of an economic activity is to participate in the creation of wealth, employment and activities, financial organisms work first for themselves regardless of the general interest. Although the objective is to not take unnecessary risks that cause economic crises, there is a balance and a social ethic that is not respected. This has nothing to do with CSR.

Is it ethical to give lower-income individuals less opportunities to save and borrow money? And thus not be able to improve their lives and their communities? It is a kind of exclusivity which is developing because of the increase of inequalities in our society. More and more poor people are becoming dependent on social aids, are victims who turn willing and almost as accomplices to their own ending because of government inaction and the profit-based policies implemented in most companies. As the distribution of income is less and less subject to ethics and justice, there is a need to limit such deviances to avoid any disruption (according to the catastrophe theory developed by R. Thom), as we will explain later.

#### 4.6.1.1. *What is ethical banking?*

As mentioned before, “ethical banking”<sup>1</sup> allows financial institutions to decide for themselves what kind of ethics they wish to pursue and which principles they are willing to follow. Those principles and policies are often written down in policy documents that are available to the public and their clients. However, while the banks may have policy differences, they do tend to share some common characteristics, which include:

– *Community involvement.* The bank takes an active interest in its community’s welfare and takes steps to improve it. Among other things, this can include funding affordable housing projects, providing scholarships for students in local high schools, sponsoring community events and holding seminars to educate members of the community about their services.

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1 <http://www.finweb.com/banking-credit/what-is-ethical-banking.html#ixzz4bWpN3hsf>

– *Sustainable practices*. The bank makes an effort to apply environmentally friendly practices whenever possible as well as to support clients who practice those policies.

– *Client screenings*. The bank screens its clients in order to avoid doing business with individuals, organizations and corporate entities with a history of unethical and immoral practices. For example, it may avoid doing business with a company that has a history of using child labor.

– *Consistent internal and external ethics*. Simply put, the bank practices what it preaches and applies the same ethical priorities to its internal operations as it does to its external operations. For example, if a bank is not going to do business with a company that does not offer its employees health insurance, it cannot refuse to offer health insurance to its own employees.

Under these above conditions and principles, it is difficult to distinguish a difference between ethics, the desire to preserve its future development, risk management and the CSR.

#### **4.6.2. Offshore banking [REM 13]**

Offshore banking<sup>2</sup> involves setting up a bank account in a foreign country. Many people set up bank accounts in foreign countries in order to take advantage of foreign banking regulations: this provides people with additional interest, confidentiality and a diversification of their holdings.

Many governments (even if they may benefit from these opportunities) are criticizing such practice for several moral and ethical reasons. Indeed, several questions may arise:

– The main advantage of offshore banking is that we can earn more money in interest than we would be able to with a traditional bank account. Indeed, they are considered tax havens. Consequently, they can afford to offer higher interest returns to their consumers. The financial advantage is generally low but can be high if one has the privilege of having a large account balance.

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2 <http://www.finweb.com/banking-credit/pros-and-cons-of-offshore-banking.html#ixzz4bWpw1DeF>

As soon there is such clustering in the customers' community, are these practices ethical?

– Another advantage of getting involved with offshore banking is that this type of banking is often confidential, for both rich customers and even governments. More and more governments, however, are prohibiting such practices and require pertinent information about banks' customers. But again, is it ethical to disclose such information, the names and practices of our customers?

– Using a bank account in open and developed economies or countries means your bank account is not confidential but insured against bankruptcies up to some limit. Conversely, when an offshore bank closes, you are not able to get your money back in most cases. As a consequence, it is the corrupt money that benefits. In a democracy, is it sustainable and ethical?

– In many cases, additional fees must be paid in order to set up an offshore bank account. In a foreign country, money transfers (both sides) also cost more due to conversion rates and currency charges. Is it an ethical new opportunity to cover these additional charges with black money?

### **4.6.3. Theory of diagonal proportion**

This section is dedicated to seeing how we can find an equilibrium, in the current life, between the ethical need and the utility level perceived by an individual in regards to a good or privilege. Some basic principles are issued from Varan's work [VAR 06].

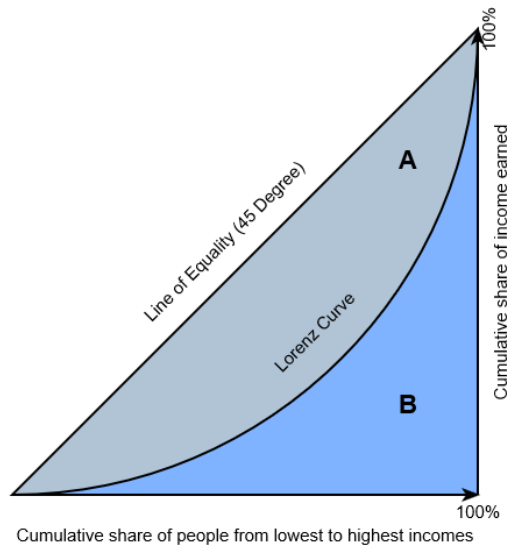
This equilibrium is based on the crossing of two curves: the Lorenz Curve and the indifference curve.

### **4.6.4. The Lorenz curve**

In economics, the Lorenz curve is a graphical representation of the distribution of an income, or of wealth, or again social advantage, an authority, an asset and so on. Such a curve was developed by Max O. Lorenz in 1905 [LOR 05] to represent inequalities and wealth distribution in society.

The curve is a graph showing the proportion of overall income or wealth assumed by the bottom  $x\%$  of people; it is often used to show the bottom  $x\%$  of households and the percentage ( $y\%$ ) of the total income they have (the percentage of households being plotted on the  $x$ -axis, whereas the percentage of income is on the  $y$ -axis).

The Lorenz Curve is considered as being an “inequality curve” that always starts at  $(0,0)$  and ends at  $(1,1)$ .



**Figure 4.3.** *Distribution of an income in a population (inequality curve)*

APPLICATION.— Points on the Lorenz curve represent statements like “the bottom 20% of all households have 10% of the total income”.

A perfectly equal income distribution would be the one in which every person has the same income. In this case, the bottom  $N\%$  of society would always have  $N\%$  of the income. This can be depicted by the straight line  $y = x$  called the “line of perfect equality”.



By contrast, a perfectly unequal distribution would be the one in which one person has all the income and everyone else has none. In that case, the curve would be at  $y = 0\%$  for all  $x < 100\%$ , and  $y = 100\%$  when  $x = 100\%$ . This curve is called the “line of perfect inequality”.

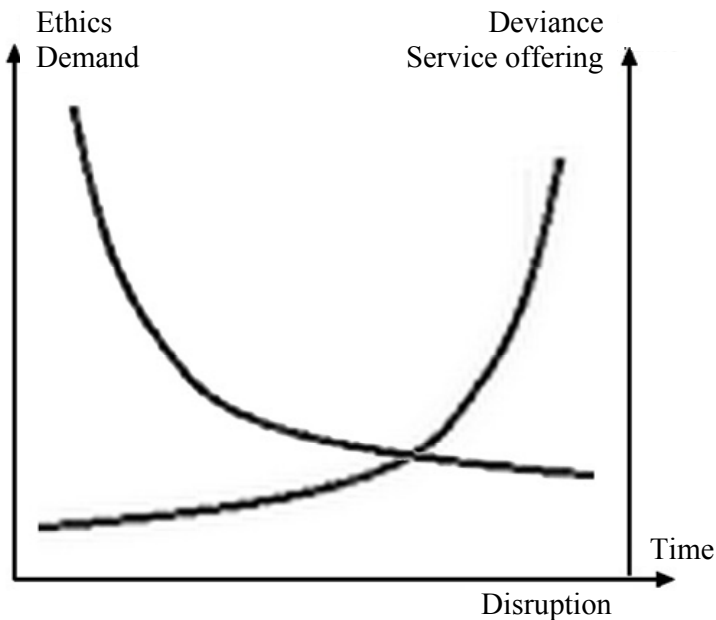
To express the gap between the inequality curve and the perfect equality curve, we use a “Gini coefficient”. This is the ratio of the area between the line of perfect equality and the observed Lorenz curve to the area between the line of perfect equality and the line of perfect inequality. As for a standard deviation, the Gini ratio measures the statistical dispersion of an income or wealth or asset: it is the most commonly used measure of inequality [GIN 12].

Today, more and more processes no longer demonstrate a normal distribution: this is because power laws are more and more common in our society. At IBM, we developed [MAS 06b] techniques based on the “James Stein” estimators to represent unusual tails in our statistical distributions. Indeed, in complex systems, because of the existing interactions and feedback, the propagation of failures is always higher than expected and systems are then subject to nonlinear dynamics and then deterministic chaos. In economics and sustainability [MAS 15a, MAS 15b], the same situation arises: thus, inequalities or asymmetry affect a process more than traditional distribution patterns. Such concepts also apply in biodiversity, business modeling, consumer finance security (delinquencies) and so on.

#### **4.6.5. Ethics and welfare**

Welfare economics is a branch of economics that evaluates well-being (welfare) [DEA 16].

The methodology consists in defining a social welfare function or measuring a welfare overtime, which can be used to rank economically feasible allocations of resources in terms of the social welfare they entail. The measures are expressed by a quantity of economic efficiency and equity, economic freedom or ethics.



**Figure 4.4.** *Curves of welfare (right) and indifference (left)*

The social welfare function described above is typically translated into social indifference so that it can be used in the same graphic space as the other functions that it interacts with.

A social indifference curve drawn from an intermediate social welfare function is a curve that is linear and slopes downward to the right.

In economics, the left-side curve, the indifference curve, connects two points on the graph representing different quantities: the need for ethics on the ordinate and the level of well-being, or wealth acquired, in abscissa. We can give some examples as follows:

- The frequency of advice requests and the need to use the support of a think-tank are transformed into suggestions and influences that are more directed and controlled from the outside. This growing commitment to imposed rules leaves less and less room for ethics.

– The more centralized and authoritative management systems are, the less prevalent are the ethics.

– The more one moves away from a networked organization, the less the mode of functioning is egalitarian (no more peer-to-peer): it becomes hierarchical or coordinated and ethics is less pertinent.

– The more a company is managed around financial priorities, the less room there is for ethics to play an effective and useful role.

– The more the world is polluted, taking more from nature than it can give, the less sustainable are the abuses and the less appeal is made to ethics.

– The more selfish we are, the less ethical we become.

In fact, on such an indifference curve, the ordinate represents the utility of ethics, while the abscissa represents the satisfaction level, or utility provided, in response to some needs or by a bundle of goods. A point on this curve shows a best consensus between the two preferences.

The decreasing curve we chose is an intermediate form of social indifference curve: it can be interpreted as showing that as inequalities increase (for wealth, power or sexual reasons), a larger improvement in the utility of relatively rich individuals is observed in parallel with the loss of utility for ethics. Similarly, the loss in utility of relatively poor individuals requires putting more emphasis on ethics to compensate for their situation.

APPLICATION.– When the two curves are associated (indifference curve associated with Lorenz distributions), we get a crossing which represents an equilibrium [MAS 95]. On the above graph, this crossing represents the utility associated with ethics, given the distribution of wealth within a population. As we can see, the more inequalities there are, the more corruptions there are, and the less one feels the need to practice ethics. It is a result everybody has in mind. However, it enables us to measure the gap between what people feel and the level of virtue in a society. The objective is to adapt the Lorenz Curve and thereby to promote ethics in order to get an equilibrium much higher than the one observed in the above figure.

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## Ethics and Media

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### 5.1. Introduction: vocational ethics and intellectual integrity

In order to better understand the context in which we operate, we will recall some definitions as defined by associations of journalists. They cover four concepts commonly used in the media industry:

1) The law. It is a notion external to the profession. Society gives limitations not to be exceeded and freedom to both physical and moral persons we can benefit from. Public administration prescribes standards of practices, and sets penalties, including termination of the activity, demotion or sanctions. The law must be taken into account, but it is not an imperative obligation.

2) Morality, whether secular or religious, it also applies either inside or outside a profession such as journalism, television or Web communication. It prescribes fixed standards and rules, which are applicable to all of those who have agreed them in the organization. Morality expresses “what can be done” and “what cannot be done”; it imposes and enforces moral values relevant to social life, by setting up rules of behavior.

3) Deontology. Deontology determines morality and the law relevant to the professional life. It was established by journalists or professionals who collectively defined and decided on rules to follow. Deontology determines how intercompany relationships have to be conducted within the corporation of medias. As for “internal procedures”, it describes how to behave within the vocational network and generally leaves little room for interpretation; it is expressed by not only codes and charters but also more or less explicit and informal standards.

4) Ethics. Ethics is like a momentum. It transcends time and space by trying to synthesize law, ethics and deontology. Ethics will fill the gaps not covered by them. Ethics is a process of questioning our own way of thinking and working, from references and values that should be clear. Ethics is a perpetual questioning, appealing to our profound awareness and consciousness; its answers may vary according to the evolving context. Ethics is the space in which the journalist, or multimedia practitioner, may assume his/her individual freedom and sense of evaluation and judgment according to the hierarchy of his/her values and references.

At the level of the principles, Ethics is far beyond collective and corporative responsibilities: we have to consider the individual responsibility of human beings who placed the human being on top, above the professional priorities. The human beings, that is, the citizens, thus take over the journalists, while ethics also takes over the deontology.

This approach will then, in the case of the Media, be focused on the value of the deployed and disseminated information.

## **5.2. Behaviors in public communication**

In this section, we describe behaviors common in professional sectors, such as “communication”, whose intent is to deploy, spread and provide information and then to ensure the education and awareness of a population.

In this chapter, we will mainly address two kinds of industries.

### **5.2.1. *The media***

As passive readers or viewers, the public is the target of the dissemination of information. Debates often take place to discuss the freedom of the press or the right of the media to speak of censorship, to speculate, to gossip, etc. However, are the intentions of each and every one of them devoid of ulterior motives? We can mention here some media attitudes which specifically buzz and denigration-oriented: consequently, we will consider a source of ideas for developing and implementing a right kind of ethics.

### **5.2.2. The press**

Nowadays, events, historical facts, promotions or specific information are processed by the press industry. However, the press also has requirements and duties, not only vis-à-vis its readers, to value (positively or negatively) a particular fact and inform, but also to its employees who make living, shareholders that it must reward and society as it has a social role to play.

Information dissemination is not the main purpose of the press; it is a well-known fact that information is biased and that editors or speakers are biased too, that is, devoted to a given amount of power or politics.

Indeed, to ensure its development and market share, the press must adapt and, therefore, attract new readers: several possibilities are open to it. For example, create fantasies; denigrate agents, facts, decisions or people; spend little time exploring the why and how of information and so on.

The opinion of an average viewer does not matter, especially if it is a negative one. As we will see, ethics under these conditions is mainly CSR-oriented, as people need television and newspapers for financial support to survive or develop.

### **5.3. What do we mean by “consistent information”?**

In the field of the media, several discussions about the notion of ethics have been undertaken. These discussions are linked to the fact that many people are currently influenced by the presentation, interpretation and wrong analysis of data and information, whether they come from journalists, communication officers, companies, newspapers (paper, digital or television), public or para-public organizations and so on.

The problem is that social networks are now ubiquitous and allow a wide diversity of sources of information, and they launch “hoax” or “viruses”, hacking and “leaks” as well. Thus, even if the level of information is not always “safe” and secure, it makes it possible to question, challenge, counterbalance or contradict a biased presentation of an event or phenomenon. In this context, we refer to the proved, validated and tested approaches already deployed in information systems.

First, we will define “consistent information”. When faced with large databases, we often observe a great number of non-valid records. This is due to many various reasons, which we will not explain here. We will just recall, among the possible causes of data rejection, the “selection criteria”. Here, we will just keep the following ones, mainly for understanding how ethics is, depending on the validity of the input information. Therefore, to obtain consistent information, checks have to be done against the following list of simple criteria:

- uniqueness of the information; truth and relevance;
- factual and non-interpreted information;
- completeness;
- non-redundant information;
- non-contradictory information.

### **5.3.1. Current applications in everyday life**

Recent events, including violent conflicts across the world, Brexit in the United Kingdom, and the presidential elections of the United States and France have led to a media outcry.

Just to take the war in Aleppo (Syria) as an example, where recent events have been highly mediatized. They are, however, common to all wars and to human nature. The extent to which this information can be biased and manipulated is huge, as is the extent to which all partners and organizations, including journalists, readers, politicians, Europe, governments, the UN and the law itself, are either powerless or active/passive actors of the situations encountered. What are the links, boundaries and limits between ethics and the interests of each of the actors involved?

In the case of Syria, photos captured by the so-called war correspondents have focused on the horror of material and human destruction. The following image of death has been seen looping on TV channels:



However, it was not shown that in some other districts (the other two-thirds of the city), life was continuing.



Everybody is upset about these horrific acts of war. However, the only intent here is to determine how a piece of information can be interpreted and subjected to the phenomenon of media rivalry: all the commentators announced that Aleppo, a martyr city, was to become the new battle of



Leningrad of the 21st Century. The offensiveness of Bashar al-Assad and his allies against Aleppo the rebel was an “assault against the humanity”, causing a high number of civilian deaths.

This is true but why did the media fail to talk about the other 50 armed conflicts (on average) in the world, with an average number of deaths of around 500,000 people per year? Why have we hidden the responsibility of politicians from all sides in these conflicts? Why have we ignored all the complex interactions that make the deviations resulting from the human action or activity degenerate (or emerge) and escape to our control?

What has been done to improve the risk management related to large economic crisis, worldwide? These facts led us to address the two following topics:

- the ethics in communication actions;
- the ethics of disinformation.

### **5.3.2. Ethics and disinformation**

When an event only involves 30% of a population and is generalized to the whole population, is it ethical? When people are trapped in a small given area, are they hostages or willing participants? How are people of different ethnic backgrounds, religions and cultures manipulated, treated, harassed or persecuted? Focusing on a “humanitarian crisis”, considering an anecdote or a societal problem, are we aware that this helps to avoid any focus on important problems relevant to other theaters of operations? For instance, we forget to talk about economy, destruction of Patrimony or tools of labor, exterminations and genocides, here or elsewhere in other neighboring countries.

When, in a civil war, 10% of the population of a country is exterminated, women and children are raped, displaced or abducted for modern slavery, within a shocking and general indifference, why does the media choose to ignore such facts?

When a famous offender, in France, is subject to the attention of the media and politicians (while multiple legal actions are still in progress, against him) because a regrettable deviation was committed against him by some policemen, is it ethical to have so biased information, when dozens of police officers were injured and dozens of cars belonging to individuals were burnt?

By handling information, what are the motivations, deontology and ethics of people who act in this way? Is it ethical to consider some of these people who persecute, parasitize or profit from a society for personal ends as “humanists”? If we consider that we are living in a prey–predator system, how should we develop ethics in such situation?

It is the disinformation, lack of fairness and justice in the handling and interpretation of information that creates bias, that is unethical, and then generates the uprising of a population. In several cases of events that occurred in 2016, the “tendentious” coverage of an event by the media, and the inappropriate position taken by political leaders or major international organizations, was sometimes more than an indecent: it is a matter of “incomplete staff work”, laxity or the manipulation of ideas and ideology. Is this ethical?

After trying to frighten the “good” people with a specific media assembly, or having altered the course of the things, wrongly, over time, and when the facts have given them wrong, the leaders do not dwell anymore on the physical and material fate and on the psychic disturbances of the victims of their acts, but when the evil is done, it is done.

### ***5.3.3. Implementation of ethics in the media, press and communications***

In most Western countries, journalists naturally associate “freedom of the press” with the responsibility of their job. However, it all depends on who is responsible and who is entitled to define it. Many misunderstandings stem from this lack of organization: is it an independent profession? Can it ignore the constraints, culture and characteristics of the society to which it belongs? What are its goals and objectives? What are its rights and duties?

In order to develop information, a data analysis or a point of view, it is necessary to possess knowledge; however, to know something and to be plausible, we have to have learned and lived: so, everybody needs some knowledge, know-how and well-being. Moreover, being highly skilled still requires much additional intellectual or manual capabilities. Hence, there is an imperious need to remain modest, humble, true and respect others. This is called training and learning to responsibility. It is also part of the professional ethics. Unfortunately, many people are not really skilled.

Agitation and indignation regarding the attacks or criticisms of freedom and responsibility in the press are subject to empty reactions. Without the help of some solid arguments, methodological proposals and convincing results, about practicing ethics, how can we give confidence to users and customers?

In economics, symposiums, seminars and meetings are periodically held to explain the operations of large companies, the “crisis” on ethics in some professional sectors, like the press, how adaptive strategies are implemented and so on. New technologies have changed the world: the speed of information exchanges, the quasi-free charge exchanges, the quasi-suppression of borders, mass personalization and personification have led to a profound and rapid evolution in all sectors of activity.

When we need information or an explanation, in a vocational service, we do not need for a muddy or biased interpretation. How is ethics evolving within this context?

In any sector of activity, the transition from crafts to industrialization has many consequences: the loss of a monopoly of information; the densification of newspapers and titles; a radical enhancement of professional techniques; an intense diversification of trade; a crisis of trust; jobs that have migrated from the general press to the specialized press; wild, strong and recurrent slippages and so on. This is because of the nonlinear properties of dynamic systems, which are not controlled. Hence, the crisis of the press and the conventional media directly affects all the interconnected elements of this sector.

How can we analyze the consequences of such a paradigm change? The following are examples of some perceptions:

– A crisis is linked to the exacerbation of people who undergo disinformation (information truncated, interpreted or becoming diverted from its context and purpose).

– The press crisis is economic because it is linked to the development of new or more competitive media associated with different characteristics (e.g. with the social networks, the professional is no more an untouchable being).

– The crisis is linked to cultural or political pressures. It is the dictatorship of thought: what is “good” and conformable can be stated, while what is “evil” is condemned. Sometimes, censors overstep their prerogatives and are then condemned.

#### ***5.3.4. Is this situation leading into the sphere of professional ethics? Can this be avoided?***

At a time of great professional disturbances (in industry, in economy and in the press), the way and the mission of informing will be modified. What is the use of a communicator or a journalist? What are his/her responsibilities? What are his/her priority allegiances? The current trend pushes him/her to become an information technician first and foremost, because he/she is asked to format or model an information, to highlight the specific points and to facilitate reading, but not to impose ourselves or to share his states of mind. With the introduction of cognitive robotics: “if the journalistic technique is relatively clear, the missions, the meaning and the course of the profession are less and less so ...”, according to Jacques Morandat (director of the French Federation of Press Agencies).

In [MAS 15a], we defined three criteria responsible for poor adaptation to a change in a society. They are lack of skill, ignorance and greed. At present, around us, we are struck by the rise of “greed”. In these greedy times, the notion of “profession” fades in the face of that of “private interests”: buzzing, getting noticed and quickly accumulating notoriety, power or wealth are considered as real signs of success.

In these professional sectors, therefore, the problem is not to challenge their existence, role and mission, or to call jobs into question, according to our own ethical criteria. Instead, we must think about how they are perceived and felt from the outside.

According to Marc-François Bernier, the spirit has left the house. He notes that “sociological surveys point out, rather systematically, the concept of professional socialization. Hired people come into a company with their talent, their opinions, their way of seeing the world; then, they incubate their new job. The acquisition of values is by alloparenting according to his capillarity, permeability or divergence with the vocational context, then people feel good or not, and decide to stay or not. It is the same way in all working organizations...”.

With the new generations, quite often, the professional sectors become and remain segregated. This is what we call “corporatism”. People are more and more confident in their professional corporation. They are subject to it and confide in their professional partners because they are better understood. They share their confidences within their corporation and change their work through this network. They no longer have a corporate culture and no longer belong to the company. They rarely communicate or exchange information between themselves and stakeholders.

In the same way, there are few links between the academy, the company, the public and so on. Hence, the usefulness of some associations or social organizations, such as the Rotary, which, by its philosophy, allows and fosters the interactions between the various sectors of activity, skills and cultures, professionals of different kinds.

### **5.3.5. Courses and training on ethics in journalism**

In this section, we just relate what is planned in the “Practical Institute of Journalism”. It is a very informative section because what is happening with the media and the press can be transposed in many other industrial sectors.

The 2009 booklet of this Institute quoted “I remind you that the objective of this course is to encourage you to think, not to impose answers. Ethics is not personal ‘convenience’ but personal ‘involvement’: what are the values

that I consider above all? What are the trade rules that I follow? I propose to you this definition: the ethical approach would consist of identifying concretely in a professional situation, the conflicts of values in question, to prioritize them and to decide. Beyond the law, codified deontology and morals, ethics calls for the discernment and personal commitment of each journalist”.

We note here the notion of personal commitment but nothing about consciousness. In terms of definition, it is more a methodology that is defined. Finally, as is often the case in various professions, ethics is more focused on social responsibility; also, respect for others, empathy and so on are rarely quoted.

It is sometimes said that ethics is not taught enough in journalism schools. This is also the case at universities and engineering schools.

We will quote Patrick Berthomeau, who works in the press industry: “An ethics course is often perceived by students as somewhat abstract. They are very fond of concrete. The challenge, for the students, is to integrate the dimension of an extreme vigilance to fight against the evils that threaten us unceasingly; for instance: mixing communication and information, connivance, cronyism, complacency ...”.

Along these same lines, we can also quote an interview with Daniel Cornu<sup>1</sup> [COR 98]:

“The journalist has responsibilities, but he is not alone. It is imbricated in a system where all actors are interdependent. This includes the public, the readers, etc. It is a wide field!”

“I tried to restore the journalist in his professional, even social context. An individual faced, every day, every hour, with the demands, sometimes draconian, of profitability, to the pressure of the sources, the advertisers. The technological pressure, and the speed of information, too, which often prevents the professional from taking the necessary step back”.

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1 [www.culturactif.ch/ecrivains/cornu.htm](http://www.culturactif.ch/ecrivains/cornu.htm)

Similarly, for Jacques Trentesaux: “It is not utopian, there is indeed a convergence of interest in the long term. But the problem remains the short term, with imperatives of returns and immediate sales. Marketing people are mixing practices with the integration of many inventive products”. It is a perverse logic that undermines the newspaper’s credibility. It would be urgent to succeed in building ethical rules, which would only focus on mid-term objectives.

Thus, ethics in the media remains a major and underlying concern, even though the approach requires better harmonization and a more comprehensive and coherent strategy.

## **5.4. The general problem of information asymmetry**

### **5.4.1. Introduction**

In the above, we analyzed problems related to ethics in several activity sectors, where the role and mission is to keep people informed about what is going on, in any domain, and help them in decision-making. Regarding the difficulties encountered, we mentioned the notion of disinformation, the problem of information manipulation and so on.

In fact, we must integrate and develop, in our decision sciences, communication practices and so on, some general and advanced concepts related to asymmetry, chirality or even some specificities such as the Coriolis effect to better understand how new processes can emerge. This was developed in [MAS 15a]; to remain simple, we will just detail the problem of asymmetric information, as it is more often encountered in our processes.

The objective here is to see how we must organize our information processes, without rejecting the existing ones, and what has to be provided to be more efficient, effective and “right” in our cognitive systems.

### **5.4.2. Asymmetry in nature: is this a novelty?**

Asymmetry is everywhere. It is very important to note that in nonlinear complex systems (because of the SIC effect) two agents may basically have all their properties controlled or destroyed except for small differences between some of their human excellence or specific capabilities. As a result,

completely different behaviors or results may occur about the evolution of a system. It is a consequence of the butterfly or pocket billiard effect. Indeed, the pool billiard includes convex obstacles represented by the presence of several balls on the pool billiard table. Two balls that start from a given corner of the pool table, along paths very close angular range, will diverge after a few collisions and have opposite trajectories: this happens each time power laws apply in a system.

A more commonly quoted asymmetry is that which exists in the brain. Here, asymmetry refers to the uneven involvement of both cerebral hemispheres, within its different mental functions. Indeed, the two hemispheres are anatomically very similar (as highlighted in life sciences experiments and observations, they are due to stem cell differentiation caused by protein interactions at the level of DNA), but their differences are related to very subtle characteristics, as follows:

- the “left side” brain is more analytical, logical and mathematical; it includes speech processing and preferably functions in a bottom-up approach: starting from the detail to move toward more complexity;

- the “right side” of the brain is more analogic, empirical and intuitive. It works as a global holon, in a more holistic way. It is more suited for image processing and non-verbal communication.

On the basis of Piaget’s work, we can bring out some concepts related to analytical intelligence and empirical intelligence. In this book, the comparison will stop there because applications of this theory could be subject to much debate. What we can say, however, is that any human being needs both hemispheres to exercise all the brain capabilities (as in a holistic approach). Nevertheless, the precise architecture of the links and the interactions (which also requires the simultaneous activity of several parts of our brain) are not well known: they enable the synergy between these structural and functional differences; even they are poorly understood and are fundamental to better implement co-working notions within a inhomogeneous network.

This is what we observe, at a different scale, in a company: decision-making can be defined thanks to the use of a mathematical model. Such a model, however, can be inadequate and give rise to poor decisions. Here, the



most important contributing factor is related to the interactions and asymmetries existing everywhere, just because the data and knowledge bases (DKBs) are not consistent! As soon such a decision-making process is unable to highlight and define the significant Interactions between facts causes and forces, it is necessary to imagine and integrate virtual forces or “confined” factors that govern them. This is a kind of inductive or reconstructive work, in large DKBs, to extract or extrapolate some possible missing information.

Another example concerns the project management process. Here, 90% of project management problems and failures are not due to technical difficulties but to external factors such as assignment of responsibilities, sharing or reconsidering skills, span of control and management and power struggle. As a result, when comparing a project development situation with the initial plan, big asymmetries are often caused by seemingly minor human issues: personal skills, moral sensitivity and behaviors whose effects are quite huge on the project development success.

Thus, asymmetry is a natural phenomenon. In itself, asymmetry is an ethical concept: what is non-ethical is to take advantage of a distortion and to deceive the people to whom it is addressed by exploiting their honesty.

### **5.4.3. Information asymmetry in call centers**

Call centers are becoming essential components in many large businesses [HAS 07]. More and more often, people are contacting a virtual service (a call center), to have a question related to a given problem resolved (business, retirement, technical information on a product or service, etc.). People can also be contacted by a call center for an opinion survey, to obtain social, marketing or economic information, etc. Under these conditions, and thanks to the Web, the call center service of a company can be located in a distant country. While some firms choose to create their own internal call centers, many other companies now purchase call center support services from other firms, sometimes in another continent.

In outsourcing, a firm (the client) hires a call center specialist (the vendor) to provide sufficient technology, resources, knowledge and service to help the final client's customers. The client specifies the quality of service (QoS) and the financial terms in a detailed contract, which may include queuing performance criteria (e.g. 80% of callers wait less than 20 s), customer satisfaction requirements (as measured by surveys or observed by monitoring calls) and financial rewards and penalties. Such contracts also affect the capacity investment decisions of the vendor as well as the financial performance of the client, vendor and the system as a whole.

A call center can be considered as a service supply chain, where the relationship between the client and the vendor (server) is similar to the one between either a retailer and its supplier or a manufacturer and an end-user and so on: the client purchases a capacity, a capability and a skill from the vendor, while the vendor tries to develop a sustainable business.

The paradigm change, compared to a conventional client-server relationship, is that the vendor interacts directly with the customer, whereas in a conventional product supply chain, it does not: the customer is unobservable by the supplier.

As a consequence, measuring the performance of the system, which is of key importance to preserve the economic development of each partner, is a problem because the elaboration of the contractual partnership is critical and involves unobservable information, behaviors and results. Independently of the strategic and influencing factors about a final decision, this will have a strong impact on:

- The customer decision, in terms of a “Make or Buy” approach, because better decisions can be taken as soon as better and less distorted information leads to less risk. Also, the supplier may lose revenues and profit, as its customers are waiting in line or abandoning a waiting queue, because of low QoS: this is conducted to choose a different brand for his/her future product and services.

– The vendor’s actions, in terms of staffing level and service rate that are chosen to maximize his/her profits under a given contract, because poor service can lead to immediate losses on future sales.

Any contract, such as a “call center” contract, can be modeled to find the good equilibrium through appropriate business decision technologies. As mentioned in this book, these equilibria are reached using peer-to-peer mechanisms: negotiations, game theory, asymmetric information processing and so on. For instance, in each contract to be modeled, some quality and performance parameters will be introduced:

– The waiting-time target, or service-level agreement (SLA), in the area of financial incentives and penalties. The “SLA penalty” implies that the vendor would pay a financial penalty for not meeting an SLA.

– The AHT (average handle time): it is the average service time per customer. “AHT penalty” means that the vendor pays a financial penalty for going over an AHT target (or going under a service-rate target) set by the outsourcer.

– Some payment mechanisms: pay-per-call (PPC) and pay-per-time (PPT). Quite often, PPT schemes are always accompanied with penalties for not meeting AHT targets. Indeed, the PPT compensation scheme provides an incentive to the vendor to increase the AHT, and the AHT penalty limits this behavior.

– Statistics about the average demand rates: they are determined accurately and generally well known to both the vendor and the client.

If the level of demand is uncertain, both PPC and PPT contract mechanisms reduce the vendor’s risk of large losses, because there are compensations, as a demand surge requires it to add expensive capacity and to meet the SLA. Thus, PPC and PPT contracts allow the customer to overcome information asymmetry with respect to the vendor’s potential productivity. When clients negotiate terms of the contract with the vendor, the vendor may have significantly more information on the maximum possible service rates of its own service agents. This information asymmetry

may be caused by a wide variety of factors. For example, a vendor hiring and training service agents can then better assess their potential productivity. Moreover, the vendor provides similar services to other clients and therefore has more experience and data that can be used to better forecast its competitiveness. The latter explanation becomes increasingly plausible, as more firms are outsourcing their call center operations and retain less knowledge about their own customer-service processes.

The results of this above study were obtained by [HAS 07], which are quite interesting. They can be applied everywhere. Even if the complete content of the report is not detailed in this book, it is important to highlight some critical points:

By offering both PPC- and PPT-based contracts rather than a single-contract type, the client can reduce the information rents by screening the vendors without a significant loss in the overall supply chain performance. Also, when the client has complete information about the vendor's productivity, then there is no need to include an AHT constraint in an optimally designed PPT contract. When there is information asymmetry on vendor productivity, then an AHT constraint increases the client's profits and improves the supply chain performance. Therefore, the existence of AHT constraints in the PPT contracts signed by our vendor is consistent with the model of information asymmetry.

Another significant difference between the model developed in this study and standard models from labor economics is that the PPT and PPC contracts are not used to weed out (or avoid hiring) inefficient vendors. Because of the high fixed cost to select and establish a service relationship with a vendor, clients are reluctant to switch vendors and instead must design contracts to extract the best performance possible from a favored vendor. Using a well-designed contract to "get it right the first time" has significant value in these settings when compared with costly alternatives, such as careful onsite monitoring of the vendor or renegotiation after a probationary period. Onsite monitoring of call centers to determine if workers are as productive as they could be is fraught with challenges. Knowledge of the local labor pool and training methods is necessary to set realistic performance goals, and both local labor conditions and training regimes are difficult to monitor.

In terms of an impact on ethics, we could say that a holistic problem solution and modeling is always necessary to generate useful decisions and alternative views related to an innovative process.

When a “client” firm has outsourced one function or activity, it is less able to effectively benchmark performance measures. When call centers are offshore, monitoring is still more expensive. Thus, performance-cost studies are always required before any involvement.

Interactions remain a major challenge: while clients often look for quality in the customer interactions, simultaneous productivity and monitoring objectives are defined by the vendor and may lead to conflicting motivations.

Finally, the control of information asymmetry related to service agent capabilities and process performance or sustainability of the whole system are of key importance in the new economy.

#### **5.4.4. General information on asymmetry: anti-globalization corporations**

In sustainable organizations, information asymmetries clearly exist between environmental organizations, public institutions and industrial firms: this increases the administrative and technical decision costs due to initiating discussions, new policies and associated development costs in order to satisfy conclusive, constraining or challenging requirements.

When faced with surprising, inconsistent and even uneconomical decisions, the information about regulated firms, in-depth societal needs and international competition (i.e. with lower information asymmetries) will have lower decision costs, thereby facilitating equities and policy-making.

Such situations regularly appear as soon as discussions, predictions and decision making are involved in either energy (sourcing, transformation, consumption, etc.) or sustainable development (developed or developing countries) and economic decline (the solution to economic crisis?). All these

organizations exploit the various natural sources of variation, truncations and interpretations and speculations, issued from available information: it is an advantage and an art to generate information asymmetries in specific sensitive areas, where utility factors, apocalyptic situations and financial commitments are involved.

Lobbying is, most of the time, conducted through social networks: more and more frequently, they are subject to informal meetings, on international and open network of user-generated conferences (e.g. barcamps). These non-conferences are in fact powerful and participatory workshop events, based on predefined contents and topics like public transportation, health care and political governance.

As soon these social organizations acquire more contradictory information, experience and influence about utility operations, they are more likely to enact rate decreases and less likely to implement rate increases [FRE 10].

#### ***5.4.5. Asymmetry in communication and decision systems***

Asymmetry is everywhere in a decision process lifecycle. This is because a decision maker is like a holon in a holistic system. He/she is both receiving information from this system, with respect to his/her decision, and deploying information with respect to all future decisions.

In our global world, the decision-making system is structured as an interconnected network where local decisions are subject to consensual equilibria. Indeed, each decision maker elaborates and chooses an action according to the biased or asymmetric information available from his/her stakeholders or operational systems [AND 11].

Also, after the implementation of a decision action, he/she receives an informative but imperfect signal about the once-and-for-all realization of an unobserved state, leading to external systems. This information, thanks to positive or negative feedback loops, directly affects preferences over current and future decisions.

Even in a same local system, a decision maker is not aware of all the underlying principles in progress and sometimes ignores some cultural, technological or political incites. Thus, he/she does not directly observe the realized signals or actions issued by some other managers; this is a normal fact, as the evolution, in nature, is based on the emergence of diversity: this diversity will better emerge if it is based on the remembrance of successful results and experiences and not only on deficiencies. Consequently, we are more inclined to rely on cheap-talk messages (as used in game theory), or positively asymmetric information in order to accumulate data and informational facts about a given situation, and to influence our beliefs. It is a kind of “learning” equilibrium, across several periods of time.

Transmission of information, in any internal or external organization, consists of a huge quantity of exchanges and interactions between holons (decision makers). It is impossible for each holon not to hear and be sensitive to interpreted messages coming from either his immediate predecessor, or co-working partners, and not to be influenced by many messages issued by his stakeholders.

In these phenomena related to emergence, learning and reasoning are not the only way to elaborate consistent decisions: they require time to collect and sort all relevant data; they also need better controlling system complexity. As we can easily understand, reactivity and dynamic pattern recognition (e.g. through case-based reasoning) are more often useful in any decision processing.

Also, as mentioned above, the asymmetry in information exchange can be modeled in three dimensional space variables: time, space and culture.

Culture can be associated with the already defined notion of dark-matter. It is like a dummy and mental substance, which causes the global asymmetry of the system.

In this book, we often talk about time–space dimensions, however, because of the notions of asymmetry and learning (time and space are conjugate variables, in modeling, then necessarily interacting together), we cannot exactly define their mutual influence.

In a different field, that of social networking, some web applications are generating similar ambivalent properties.

For instance, the objectives of advertising, through ads and cookies, emergence phenomena and global commerce are that we would buy a same product (shirts, pants, sport goods, cars, beverage, etc.) in all the countries. Under this condition, we can say that the natural creation of diversity (the one characteristic required by evolution and adaptation) is now counterbalanced by a unification or homogenization of the products and services, leading to a lack of diversity and creativity.

What about human activities? The human being has an infinite capacity to think and feel. This results from the activity of our brain.

However, to the extent that all living beings have a tendency to standardize their way of life, mode of communication and so on, because of the interactions between people and worldwide globalization, it raises the question of how behavior will change? How will it evolve? Will we become “sheep of Panurge”? Is this the best way for the evolution of man? Do we intend (our society) to evolve that way?

There are many wedding planners on the Internet. More and more couples are willing to reassemble and get married. Wedding agencies are increasingly using scientific approaches to group people, or forming couples so as to provide a maximum compatibility.

Coupling is neither necessarily initiated during village festivals nor at work or in business meetings, but elsewhere in the Internet. While this approach gives positive results, we can ask the following questions:

- Now, matchmaking and/or coupling of people, and marriages, are optimized and carried out automatically.
- There is no surprise, no spirit of adventure and no spirit of risk behind such an approach. Is it toward a society that is disillusioned and without excitement that we want to go?



– In a world without risk or surprise, and real social achievement, where are enthusiasm and diversification? Is it the best solution in terms of search, discovery, creativity and Innovation?

Through these examples, we can see that asymmetry and symmetry, diversification and stabilization, that is to say ambivalences have definitely to be considered in any decision-making process.

#### **5.4.6. Decision-making in an asymmetric world**

In economics, most of the models built around a firm's evolution or market behaviors assume actors are fully informed about the market specificities: we suppose they know prices, incomes, market demand and so on. However, many markets do not have this degree of perfect information: everybody talks about consistent information, that is to say unique, complete, non-redundant and non-contradictory.

Consequently, in any decision process, we have to consider the role of the “imperfect” information. This is more than just “uncertainty”: it is the problem of asymmetric information, where parties on the opposite side of a transaction have different amounts of information and mental dispositions as well.

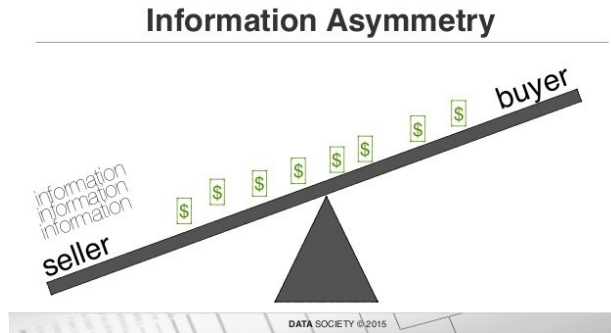
##### **5.4.6.1. When does asymmetry occur?**

Asymmetry related to information availability occurs when one party in a transaction knows the quality of a good/service, while the other party does not. For instance:

– In health insurance, the purchaser of an individual policy knows his state of health and has an idea whether he is a high-risky person; the insurance company may not know the potential risk related to its expenditure. In the same way, the doctor understands the proper treatments to be applied; patients do not know all the effects of a medicine. However, nobody can predict something about our precise life expectation!

– Job applicants know their quality as workers, whereas the potential employer does not. It is a difficulty when you have to hire an employee: you do not know what the performance of a worker will be several months later.

– For used cars, the seller knows the quality of the car, whereas the buyer does not know its subject quality. The objective is not to buy a troubled, used and poor-quality car (a so-called “lemon” car).



**Figure 5.1.** *Check and balance. Controlling and providing information in decision making may be unethical*

As soon the information is uneven (asymmetric), the question will be to determine the right price of the buy in a competitive market: here, the price becomes a discriminative parameter since it is associated to the quality of the product, the fashion, its “image” and so on. Thus, the demand level for a specific product or good depends upon its real price, the one related to the user acceptance. The solution given is the result of a convergence toward a unique or multiple equilibria similar, as for the evolution of a monopoly price!

Several approaches are used: they are based on utility functions, correlation factors between various descriptive variables, statistics on many connected data, probabilities, analysis of preexisting functions and so on. This is why asymmetry is very different from uncertainty, which is used in non-predictable and chaotic systems.

#### **5.4.6.2. Asymmetry due to mental predisposition (or soul)**

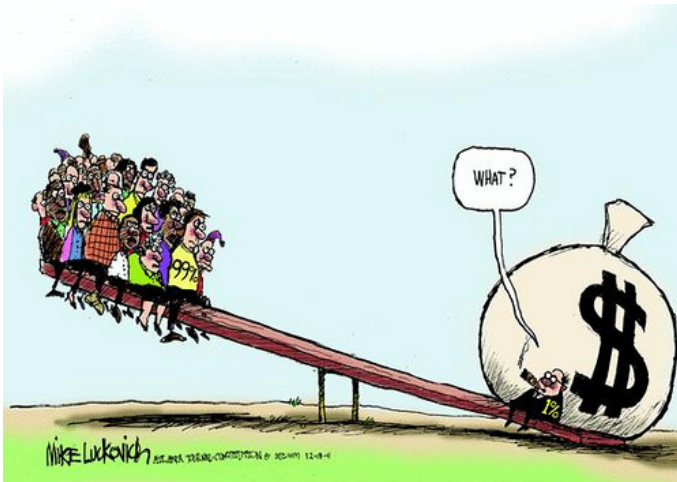
In this area, we focus on the influence brought on the system from the outside (with regard to the Godel’s theorem): it can be linked to a social environment, a culture, a political belief, rumors, interpreted facts, hunches and so on, widely broadcasted, insidiously repeated and distilled in the mental constructs of the human being (as the effect of an invisible dark substance).

Under these conditions, it is clear that we better understand why:

- in a company, or a manufacturing plant, planning will overreact each time a disturbance occurs, according to some situation or top-management stress;

- during a political election, clusters of people can be conditioned by a political left-sided party (or republican, for instance), with the help of multimedia advertising, TV speakers and so on. Accordingly, people will vote on the basis of certain inclinations guided by spheres of influence and allow a particular candidate to be elected;

- in economics, decision-making will be highly depending on influences related to a stream of thought owned by a group of economists, managers or media group of people, where some specific ideas or concepts prevail.



**Figure 5.2.** *The power of greed in decision-making.* Source: <http://www.datajustice.org/site/how-big-data-drives-economic-inequality-0>

#### **5.4.7. Application of asymmetry in the development of manufacturing capabilities**

Let us take an example in industry: in this study case, we consider the manufacturing of large electronic systems requiring a lot of components and huge manpower resources and costs. Because of market expansion, a “make or buy” decision-making process will be started to determine in

which best location/country, the assembly and test will be relocated. Some factors and variables will be considered and introduced in a decision model, such as:

- nature of the business conducted by the provider;
- control system implemented;
- size of the different companies able to participate in the product manufacturing;
- number of employees;
- financial situation;
- quality of the products, goods or services;
- possible manufacturing locations;
- social situation and regulations in each location;
- resources turnover, co-payments, etc.;
- skills and career profiles;
- job lock practices;
- reliability of the involvements;
- legislation, laws, etc.;
- corporate social responsibilities in each location;
- social impacts (number of employees to be fired, or rewarded, etc.).

Moreover, in each area, some corrective factors will be defined to compensate some influences due to our so-called mental substance. The problem consists in building sustainable policies that lead to high- and low-risk solutions, for either the manufacturer or the customers:

- the “make” solution is associated with high prices, production control or reactivity, security, strategic needs, competitiveness factor, but low customer losses;

- the “buy” solution can be linked to low prices, high quality risks but catastrophic uncertainties such as higher administrative fees, volatility of prices and production coverages.

In fact, the right choice will often involve a selection between a “good” deal and a deal that is “not as good”.

In some decision processes, where scientific technologies are not well introduced, it is common to call for “adverse selection”. This technique is more suitable as soon demand elasticities are low; due to lack of information, large differences can be observed in terms of results.

This is an ethical approach in decision-making that will reduce the risks of inequity.

Adverse selection is quite different from moral hazard: under this condition, an informed person has an advantage through an unobserved action. It is a more global notion than asymmetry. For instance, the driver of an insured car may drive faster than allowed, beyond the yellow line. Also, in the business, when you know the legal regulations in practice, you can better satisfy a specific demand, sometimes beyond the borderline or in violation of what is allowed, insofar as it is done discreetly!

Both concepts, however, can generate catastrophic equilibria (because of the SIC characteristic of a complex system), and the consequences of a given decision cannot be reliably planned, as such systems are chaotic. This is exactly what we have in electronics when the circuitry is submitted to chaotic or unknown inputs. This is also the kind of observation we have in either prey–predator systems or the game theory.

Considering what has been said, the combination of emergence and asymmetries generates needs and disparities directly depending on users. Sustainability also will take advantage of this property: indeed, we cannot control and regulate a complex system in a top-down way, through procedures and rules, as usually done; information and actions are going both ways in our interconnected systems. Solutions can only come from actions on the structure and interactions (coupling and weight considerations) of the system. These are the factors that any individual involved in information contortionism should keep in mind.

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## Ethics: Childhood and Society

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### 6.1. Introduction: a loved but coveted being

Ethics affects not only the professional sector: it is a social fact that we all face and that particularly affects the Youth. Here, we mention that the Rotary's main lines of action are also oriented toward today's youth. In this domain, each of us think about the vocational service and will put emphasis on young-people-oriented professional actions, intended to help students or startups, young business leaders, young creators of a company and so on.

However, let us not forget that the very young people are future professionals. Their training, education and the impact of the media, in general, will influence them. Then, an inevitable question arises: upstream of professional action, do we have an ethical attitude toward young people [CHA 15]? Indeed, a recent survey [TFI 16] has shown that young people spend about 4.5 h a day in front of a television set, 1–2 h surfing on the Internet or just about 3 h on a smartphone. A child is confronted with nearly 2,000 advertisements per day.

Thus, there is a growing social problem: is this normal? Where is the problem of ethics if there is one? Is it really ethical to bludgeon and pound the children with commercial advertisements? Their brain being highly soft, adaptive and malleable, how can it evolve?

In addition, since the 1950s and the development of our economy, children have become the target of a large number of companies such as: toy manufacturers, video game publishers, clothing and footwear manufacturers and so on. Adult brands also target children because they have a high purchasing power or because they will influence their parents during the buying process.

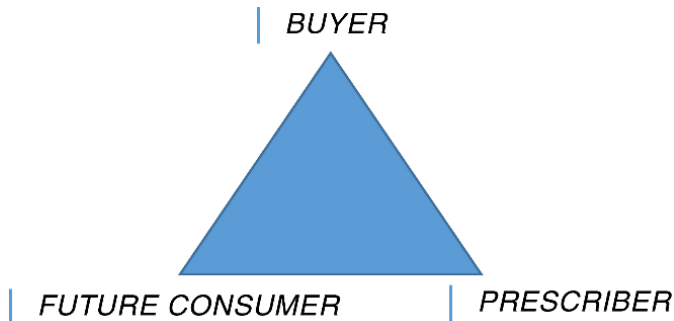
## **6.2. Specificities of youth-oriented marketing**

In order to prepare and shape minds of children, or even to ensure the development of a specific culture and values, many companies, similarly to a state government and society in general, see children as valuable resources. Thus, advertising spending toward childhood has exploded in recent years. In fact, it has risen from \$100 million in 1990 to more than \$2 billion in 2000. There are many reasons behind this growth due to a change in family structure, the increasing number of single-parent structures and the growing autonomy of young people, either at the family or financial level. Moreover, we can quote societal issues (which may shape their personality) and social issues: most young people are equipped with an MID (Mobile Internet Device), a tablet or a smartphone with which they can tweet and use WhatsApp or Snapchat.

Indeed, Western societies are changing: there are a decreased number of children per family (often below two), delayed births (sometimes pregnancy at over 40 years of age), the employment of both parents who no longer have enough time to participate in the education of young people and the increase in the number of divorces and separations (up to 50% of weddings result in divorce in the first 5 years, in some countries). All of these factors contribute to the fact that children are left to themselves, have higher decision-making power, and, for comfort and emancipation reasons, their available budget will be increased by the parents. Thus, with better purchasing power, they are able to meet their needs and desires.

### 6.2.1. Some words about marketing strategy

The following is a process used to acquire a new customer and make them faithful to adulthood. A company will usually trigger a global marketing action and assign it a triple role, each one dedicated to a specific stakeholder: buyer, prescriber and consumer of the future.



Adapting this strategy to childhood, we find:

- buyer: children have an increasing purchasing power (pocket money);
- prescriber: this is the era of the “child-king”, in which children no longer hesitate to ask and impose their choices on parents: according to a study by the institute of the child carried out in 2006, “43% of the consumption in families, is insistently required by children”. Children generate an average of 15 shopping requests during a store visit [CHA 15].
- consumer of the future: brands consumed by 25–30 year olds were imprinted in the mind of the users before they were 18 (usually before their 10th birthday).

According to the center for a “new American dream”, 6-month-old babies can already generate mental images of logos and mascots. Brand loyalty could thus be established from the early age of 2 years old [GOT 11].



Businesses are fully aware of the importance of binding a child to their brand and have three main objectives when they plan a marketing campaign for children:

- maximize the number of times children will ask their parents to buy something. They are doing that by overwhelming them with advertisements;
- instill the idea in children that they need to possess to be happy. Then, they have to make them become materialistic. It is the property of a physical good that values them;
- to create an affective relationship between the brand and the child using specific marketing codes and spots. For example, in the food industry, some fast foods will create play areas.

Today the trend is the joint use of several media supports. The intention is to assign them different objectives so that they do not have the same importance in the eyes of children. Indeed, a study by the French TV channel TF1 [TFI 04] shows that television is undoubtedly the best support: 86% of children surveyed say that television messages are the ones they know best, 72% say they are the most attentive to them and 73% that they are the greatest incentive to buy. Thus, to develop and perpetuate a market, the marketing of brands is resolutely child-oriented.

For the emotional relationship to be optimal, children must see and hear about a brand (the brand is always more important than content). Thus, they will continue their advertising everywhere: in addition to the television in the house, magazines, radios and the streets covered with posters, children are faced with scholar marketing. Major brands compete imaginatively to reach and convince children to consume: they offer educational kits, school materials, posters on buses and so on. In the institutions, advertising campaigns, meetings and debates on television deal with societal problems such as gender theory, the ability to vote for categories of minors and so on, all of which prepares them for a new society, new references and values turned toward hidden political and economic interests.

### **6.3. But, is there a problem of ethics and where?**

#### **6.3.1. *Children are vulnerable beings***

According to a large number of studies, children are not always aware of the difference between commercial spots and conventional television programs such as cartoons or movies. Two-thirds of children under 10 years of age say they trust all ads and messages received. While the child does not have enough cognitive protective capabilities to decode these signs and messages, the authority of his/her parents and the fundamental values of his/her family and nation are not always at the point of providing useful guidelines and advice, in a disinterested manner. Marketing for children is not ethical because the child is a developing, malleable, influential and exploitable being. His or her thoughts develop and become more and more complex over time, depending on the interactions he/she has with his/her environment, his/her education [BUT 81] and the advice of his/her sponsor, coach or parents and family. According to the Erikson model, the main growth of a human being runs from birth to about 20 years of age. Because of this continuous development, there is an inequality between adults and children: they do not have the same experiences, tricks and abilities vis-a-vis the different mind control techniques used by advertising companies.

#### **6.3.2. *Advertising inculcates specific values to childhood***

Advertising always plays a long-term role on the development of materialistic attitudes. It spawns the confusion between perceptive notions such as desire, intention, belief and need, as it does between pleasure and happiness. Moreover, through social networks new consumption values emerge; this is also a way to generate “emotional products” associated with concepts relevant to the sexual role included in the new products. Thus, advertising has an influence on the psyche of young people. Finally, advertising, communication through the media, brand images and the like will increase children’s dissatisfaction as well as parent–child conflicts because of the increasing number of unfilled requests. For example, according to the National Institute of Prevention and Education for Health (NIPEH), 62% of children asked parents to buy food products seen on television and almost 91% of them had their requests fulfilled.

### **6.3.3. A shared responsibility**

There are many responsibilities associated with the harassment against young people. On the one hand, companies argue that although they create advertising messages, they're usually displayed to a family, under a social environment. It is the role of parents to monitor the publicity that children face. Parents have to educate children, teach them to be critical about advertising and to highlight the pitfalls. On the contrary, parents accuse the advertisers of accepting the diffusion and display of such messages. However, it cannot be denied that certain brands promote some valuable messages and values. Any communication action, according to the principle of ambivalence, has a more or less significant pedagogical interest. For instance: they may educate children about marketing techniques. Will it also have a more or less "commercial neutrality"? How are civic education and the teaching of morals built in secular and politicized institutions that are politicized or religious? What are the boundaries between the interests of each other?

## **6.4. What are the solutions to make the influence of the media on children more ethical?**

### **6.4.1. The education of young consumers**

To ensure that a child is able to protect him/herself against advertising aggressions, it is essential to educate him/her so that he/she develops a critical way of thinking and a sense of responsibility that will make him/her a well-informed consumer of tomorrow.

This subject matter needs to be taken more seriously in our society because education is the best means of making children aware of the influences to which they are subjected. Education also provides them with cognitive elements that will help them understand the intents, good or evil, of the companies. However, in order to avoid information being biased, it would be important for this course to be the subject of specific multidisciplinary actions, involving training companies, the civil society and the family. Indeed, it is everyone's business.

### **6.4.2. Laws and some regulation still exists**

In France, the first documents related to marketing relationships with children were included in the law of 30 September 1986, which controls and regulates the activity of the first private television channels. Article 6 of Decree No. 87-239 concerning this law stipulates the following points:

- “advertising, under any circumstances, must not exploit the lack of experience or beliefs of children and young people;
- children and adolescents cannot be the prescribers of the product or service being advertised;
- children cannot be the main users of the advertised products, only if there exists a direct relationship between them and the product or service involved”.

Moreover, the 27 March 1992 decree prohibits advertising breaks during the broadcast of programs intended for children and requires a clear separation between the advertising TV sequences and the remaining part of the programs.

Compared to that of other European countries, the French regulation system remains flexible. An utmost example is that of Sweden, where advertising conditions are particularly harsh:

- all advertisements intended to children under 12 years of age are prohibited;
- the broadcasting of advertising is prohibited on television during the time periods dedicated to children;
- in no circumstances can advertisements for adults be displayed just after or before children’s TV programs;
- up to 9 pm on weekdays and 10 pm on weekends, adverts featuring children or families are prohibited.

This is simply justified by ethical considerations that are applied in supermarkets with regard to the sale of hazardous products. For example, concerning alcohol or alcoholic drinks, an employee in a store cannot sell such products:

- to an underage person;

- to a person who is clearly drunk;
- to any person who is trying to purchase alcohol for more than two people.

What is clear for the sale of a prohibited product must also be applied to its incentives, or, generally speaking, to everything related to a wrongful or biased behavior. So, considering the complexity of the regulation and the various and divergent interests of the different stakeholders, the real evolutionary path is very complex and cannot be predicted. We can compare that process to what we can see when observing the moving of a train in a railway station: at any time we don't know if the train will turn left or right.



**Figure 6.1.** *The uncertainty and difficulty in anticipating the path to Ethics*

## **6.5. Conclusion**

In terms of ethics, the authority of the family or parents must not be biased by the ubiquity of targeted advertising, especially when it surrounds us. The fact of protecting young people and teenagers is important to avoid any wrongful influences, but a world where children would not be in contact with any commercial messages and advertisements is impossible to imagine. Indeed, as children will still be faced in one way or another with advertising directed at adults, we must rely on their ability to learn about advertising and not to be completely gullible at the first contact with it. In terms of ethics, it is important to rethink (as is done with tobacco, alcohol or drugs) the role of

marketing and advertising in society and to analyze how it would be possible to reconcile it with the real needs, desires, intents and beliefs (BDI) of consumers.

Finally, regardless of age, even adults are not all equal with regard to advertising: cognitive defenses are not all developed in the same way. Thus, in the long term, it seems essential that the question of marketing ethics arises: it must be analyzed, in terms of either harassment, mind control or economics, in order to regulate and eliminate these inequalities, which do not contribute to the inclusiveness of our society.

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## Ethics and Economic Organizations

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### 7.1. Introduction

In economics, it is common to consider microeconomics and macroeconomics technologies in the management of a production system (“production” having a general meaning either in administrative, service, manufacturing or industrial fields). More specifically:

- macroeconomics deals with the performance, structure, behavior and decision-making of an economy as a whole. This includes national, regional and global economies. We will little address this field in this book;
- microeconomics involves the management of enterprises. It is the field of application we will mainly talk about in this book.

By contrast, within the framework of ethics, where the role of each individual is of key importance, we have to introduce terms such as nanoeconomy. Nanoeconomy has not to be confused with the so-called nanoeconomics. In order to understand where we are, let us give some definitions:

- nanoeconomy: it is a term used by Pete Sisco that means: “a personal economy, largely under the control of the individual who owns it”. It concerns small businesses and includes individual entrepreneurs, also called “freelance”, auto-entrepreneurs and even “micro-entrepreneurs”.

NOTE.– The market of the nanoeconomy is equal to one billionth of the global economy. According to Wikipedia<sup>1</sup>, the current Gross World Product

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1 [https://en.wikipedia.org/wiki/Gross\\_world\\_product](https://en.wikipedia.org/wiki/Gross_world_product).

being equal to approximately \$75 trillion/year; a nanoeconomy structure = one billionth of the annual global economy = \$75 trillion/year ÷ 1 billion = \$75,000/year; so, the average revenue generated by each personal economy is unneglectable.

Nanoeconomies have to be examined including: entrepreneurship, education, intellectual property, capital, jobs, talent, supply chains, competition and nanoscience product or service offerings.

– nanoeconomics: *not to* be confused with the term nanoeconomy, nanoeconomics is defined as<sup>2</sup>: “the economic theory of single or simple transactions. The term was proposed by Kenneth J. Arrow in 1987. The term has also been used to describe a level of analysis below traditional microeconomics, and to describe the economics of nanotechnologies”.

In this chapter, we will consider the LESSONS learned FROM our PAST experience, and recall some PROPERTIES and GUIDELINES that can be applied everywhere. Then, we will develop strategies that we may have to integrate in ethics, from macroeconomics to nanoeconomy.

As nanoeconomics covers and anticipates the impact of nanosciences on the economy, we will be focusing on some of the change drivers, key challenges, breakthroughs and opportunities that the nation will face in the near future. As a consequence, the concept of a nanoeconomic ecosystem will be studied: this will be included in the Volume 2 of this handbook [MAS 17c].

## **7.2. Macroeconomics: the three pillars**

In an enterprise, any process or management approach is always monitored and controlled using three factors: a strategy, tactics and operational management.

### **7.2.1. Strategy**

The strategy gives a vision; it defines the ultimate goal to be achieved. In this case, it bears an ideal and values. What transpires through a strategy is the permanent enhancement of the company skeleton, its structure and resources of organization, its challenges, etc. It is directly modeling the thoughts, ideas

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<sup>2</sup> <https://en.wikipedia.org/wiki/Nanoeconomics>.



and ambitions of a management board. It is not a matter of dealing with information or putting value on people, or even of positing facts, but of listening to what is emerging, to try to anticipate and to understand how a human being works and make them central within the company.

### **7.2.2. Tactics**

Tactics tells us how to achieve the objectives defined in a strategy. For example, to sell video games, everybody knows that they will be promoted on the TV in less intense viewing hours in order to favor distractions and the attractiveness of games (following the principle of “*panem et circenses*” of the Romans). Advertising focuses on “words”, not “things”. It is exactly the reverse of what is being done in science where the essential is to discover concrete mechanisms and solutions to solve a problem. Also, the games are based on co-operative techniques used in industry or organizations: team work with false brain storming, coaching with familiar terms; necessary to entertain and please delighted consumers. Here, tactics are a process that explains how to increase the revenue; it is not ethical but efficient.

### **7.2.3. Operational management**

Hereafter, we will describe some common approaches in conventional business. In our case study: operational management consists of describing how to establish the few principles described above in marketing. It is the approach of the “weakest link” that is privileged here. Discussions are reduced to false debates based on the management of the potential buyer, and not the management of time. The efficiency will involve the display of suggestive words, images and messages.

It is a disappointing but widespread practice: it often produces nothing positive in itself but emphasizes only negative aspects of a behavior or of life: it is often by speaking badly of one’s competitive products or other consumers that we can see doubt and develop alternative or subversive behaviors. It is done to make good revenue, but by speaking badly of certain facts and by devaluing them we jeopardize collaboration, cooperation, the emergence of new paradigms and the general interest.

On the level of deontology that is well codified, there is nothing abnormal. Similarly, from the point of view of morality and freedom of expression, the rules are observed, but in terms of ethics they are mind

influencing and sometimes psychological harassment whose effects are unpredictable and often devastating.

Is the personal consciousness of the marketing people affected? If solidarity and respect were better assimilated rules, if the salesman knew how to put himself in the place of the buyer and if he was more skilled, subject to empathy, would he act thus?

For these reasons, most conventional marketing approaches will lose their interest and competitiveness. The solution will come from social network: the Web user is no longer passive. He/she becomes an actor and the responsibilities are distributed and shared. It is no longer a single person who participates, but rather a dynamic whole (a community) of actors, each element interacting with others and in which new behaviors or new orders emerge.

### **7.3. The ethical challenges of a company**

In this section, we have detailed some problems of ethics encountered in the implementation of a strategy in a company. In fact, more generally, we are faced with several ethical challenges we can quote as follows [OST 13]:

1) *Fundamental issues of integrity and trust.* Integrity includes the idea of conducting the business with honesty and a commitment to treating every customer fairly. When customers feel and perceive ethical business practices, a high level of trust can develop between the business and the people to be served.

2) *Issues of diversity.* According to the HSBC Group, “the world is a rich and diverse place full of interesting cultures and people, who should be treated with respect and from whom there is a great deal to learn”. An ethical response to diversity begins with recruiting a diverse workforce, enforcing equal opportunity in all training programs: the objective is to maximize the value of each employees’ contribution.

3) *Decision-making issues.* According to Santa Clara University, a framework for ethical decision-making is a useful method for exploring ethical dilemmas and identifying ethical courses of action: it “recognizes an ethical issue, gets the facts, evaluates alternative actions, makes a decision and tests it and reflects on the outcome”. Ethical decision-making processes should center on protecting employee and customer rights, making sure all

business operations are fair and just, protecting the common good and making sure individual values and beliefs of workers are protected.

4) *Compliance and governance issues.* Businesses are expected to fully comply with environmental laws, federal and state safety regulations, fiscal and monetary reporting statutes and all applicable civil rights laws. The Aluminum Company of America's approach to compliance issues states, "no one may ask any employee to break the law, or go against company values, policies and procedures." ALCOA's commitment to compliance is underpinned by the company's approach to corporate governance: "we expect all directors, officers and other Alcoans to conduct business in compliance with our Business Conduct Policies".

## **7.4. Elements of methodology**

In fact, to integrate ethics into a company strategy, whatever the level considered (strategy, tactics, operations) we have to always answer three questions, according to Robert Finocchio, Executive Professor at Santa Clara University [FIN 06]:

- what do we stand for?
- what is our purpose?
- what values do we have?

This is a common sense set of questions that any engineer tries to answer each time something has to be done: why? when? how? where? what is the alternative?

### **7.4.1. A technical framework**

The technical framework (we will consider that of a company to define which ethical rules will be defined and incorporated in a good code of conduct) has to cover following subject matters:

- mission statement, in terms of activities to be covered;
- code of conduct to be followed;
- customer relations strategy to be developed;
- employee relations strategy, their evolution and well-being;

- social responsibility strategies;
- sustainability.

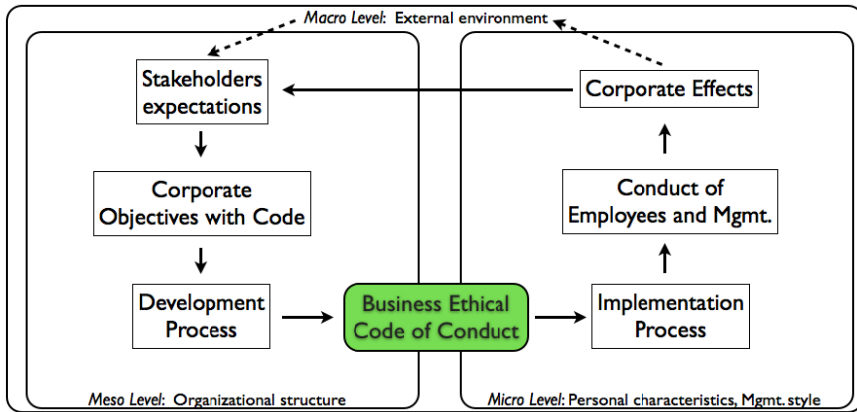
#### **7.4.2. A global and periodic statement**

Moreover, we have to keep in mind that ethics is a continuous challenge. Periodically, that is to say several times a year (at IBM, every six months we reconsidered our situation and compared it with new challenges) we have to perform a global statement and assessment, to prepare the next operations and improvement plan. This analysis is based on simple questions such as:

- Analysis and comments about our past results?
- Is our purpose sufficiently well-articulated and organized?
- Do we face new legal and financial requirements?
- Do we have new constituents, products or services?
- If we acquire another organization or activities, how will they be ethically assimilated?
- Are our rewards structures appropriate?
- Results of internal and external “opinion surveys”?
- Is there any need to change the mechanics (constituent communication, employee training, organizational structure, issue resolution processes)?
- How will we measure our performance?
- Make or buy? Relocation of manufacturing capabilities?
- Do we have new goals/objectives in the ethical domain?
- What are possible future failures and recovery plans?

#### **7.5. How to create an ethical environment**

Behind any organization there is a human being. David Kramer [KRA 11] showed in his thesis how to link the individual level of ethics with the BECC (Business Ethics Code of Conduct) to be implemented in a company. This is summarized in the diagram (Figure 7.1).



**Figure 7.1.** *Development and integration of the BECC*  
(source: <https://davidkramer.wordpress.com/page/2/>)

The implementation process is based on a positive feedback loop. Its design is intended to raise moral awareness through business ethics codes. These codes or corporate ethics programs were introduced in the 1950s in industry. In the 2000s, approximately 80% of the 500 largest US companies had an ethics code in place. The BECC codes fall into three categories: code and compliance, identity and values, and social outreach [DON 00]. The content consists of behavior and actions discussed in the codes, enforcement procedures and penalties [FAR 02].

## 7.6. Nanoeconomy: the role of the human being in an ethical environment

The role of the human being is of key importance since any decision and action is based on them. Moreover, in a company, we always have to keep in mind that the model, for example, comes from the “top”. The first person who has to apply ethics principles is the CEO (Chief Executive Officer). If, by accident or misfortune, a deviance were observed in the management board, the person responsible for the deviance would have to be replaced [THO 13].

Indeed, if we want everybody in a company to act ethically, no deviance in this structure can be admitted. The so-called RIP (Rank Is Privilege) no longer works: today, thanks to social networks, everything is known and everything is amplified. Our global environment is evolving such a complex system (nonlinear dynamic system) and any tiny deviation may lead to deterministic chaos.

This is the reason why, in modern industry, the implementation of Six Sigma, or lean manufacturing, is so important to control and monitor any SIC (Sensitivity to Initial Condition).

As such, in the field of ethics, ethical management, etc., we have to start with ethical leadership.

People want a leader who treats everyone with respect, who is fully inclusive and respects differences, and who is willing to build trust inside the organization and across political, economic, social and cultural boundaries.

Effective leaders must focus on what is right and exemplify to their people that they are there to help, and not to exploit the vulnerabilities of others. In her new book, Linda Thornton details some crucial behaviors and actions requested to leaders [THO 13] who want to integrate ethical conducts in their organizations:

*“1) Face the complexity involved in making ethical choices. Don’t oversimplify decisions. Involve others in more of the ethical decisions. Be a leader who talks about the difficult ethical choices, and help others learn to take responsibility for making ethical decisions carefully.*

*2) Talk about the right thing to do in the context of your daily challenges. Don’t separate ethics from day-to-day business. Make it clear to your people that ethics is “the way we operate” and not a training program or reference manual. Every activity, whether it is a training program, a client meeting, or an important top management strategy session, should include conversations about ethics.*

*3) Demonstrate respect for everyone all the time. Don’t allow negative interpersonal behaviors to erode trust. Make respect a load-bearing beam in your culture. Be an ethical leader who expects it and practices it. Cultivate a respectful environment where people can speak up about ethics and share the responsibility for living it. Build trust, demand open communication and share the ownership of organizational values.*

4) *Take responsibility broadly, and reach for the highest level of ethical leadership. Don't think about ethics as just following laws and regulations. Take action and show consumers and other stakeholders that you are actively engaged with ethical issues that matter. Recognize how ethics influences their reasons to buy from you, and demonstrate your commitment to go beyond mere compliance with laws and regulations. Prove that you are committed to ethical issues, including human rights, social justice and sustainability.*

5) *Hold everyone accountable, and expect leaders to model the standards. Don't exempt anyone from meeting ethical expectations. Allow no excuses. Make sure that no one is exempted from meeting the ethical standards you adopt. Maintain the status of ethics as a total, absolute, "must do" in the organization. Hold everyone, particularly senior leaders and high profile managers, accountable. No exceptions!*

6) *When you talk about ethics, don't just talk about the negative. Celebrate positive ethical moments. Be a proactive ethical leader, championing high ethical conduct, and emphasizing prevention. Talk about what positive ethics looks like in practice as often as you talk about what to avoid. Take time to celebrate positive ethical choices.*

7) *Don't ever stop. Talk about ethics as an ongoing learning journey, not a once-a-year training program. Integrate ethics into every action of your organization – everything people do, touch, or influence. Talk about ethics as an ongoing learning journey, not something you have or don't have. Recognize that the world changes constantly, and that ethical conduct requires that everyone remain vigilant. Ethics has an important and permanent role in our work lives for as long as we live".*

## **7.7. The Rotary and the business: similar basic concepts**

Business ethics is modeled as a set of principles and good practices that can be adapted to various situations, associated with a professional and personal consciousness.

If we look at the properties and the characteristics of ethics either in The Rotary or in professional life, there are a lot of similarities. This is particularly clear when comparing the four-way test, with the commonly used BECC.

On a practical level, ethics and morals interfere together. Morality is more on the side of the group and ethics on the side of the individual. Morality is imposed from the outside to the human being. Ethics is a more personal approach because it is unique, i.e. linked to each individual consciousness and to his own judgment and psychic appraisal. It is of various types in society. Ethics is a questioning of practices in use and is validated during an action. It is for this reason that it can be considered as a “practical wisdom” based on common values.

On the operational level, business ethics is based on references and good practices such as:

- the respect of others and their differences;
- the respect of the general interest;
- the respect for what others have to say, and respect of its content;
- the firm belief of the corporate and social relationships;
- the continuous search for the autonomy of the other;
- the permanent confrontation and evaluation of practices and modes of working within a team.

To summarize, and be successful, ethics requires three main characteristics we could define as respect, empathy and sympathy:

1) *Respect* means consideration of others people, laws, etc. and recognition that outside characters, opinions or ideas may be useful to everyone.

2) *Empathy* is necessary for understanding and seeing someone else’s situation from his perspective, then understanding his feelings, sharing his emotions, his distress and exclusion.

3) *Sympathy* consists of taking care of others and their concerns. Sympathy, however, has to be distinguished from benevolence, which is a much more detached and impartial attitude (than business oriented).

Pity and compassion must be avoided within this framework since they are too emotional and personal engagement oriented.



## **7.8. Any leader in ethics has a strong impact on human beings' behaviors**

Ethics helps to prevent “evil” behaviors in a profession, in society or humanity and allows us to decry those who have such prohibited behaviors (for instance, discriminant hiring, harassment by a boss, etc.), some wrongdoing (disclosure of confidential information, such as the fact that a share will progress strongly at the stock exchange) or harmful actions (when making certain alerts public, example of avian influenza).

Professional ethics must also stop and isolate prohibited behaviors and reinstate the responsible person with the assurance that it will not continue or start again; in parallel, he has to protect the victims and show a spirit of justice.

The aim of ethics is not to exclude individuals who behave badly (sometimes without realizing an action is “evil”), but to limit these behaviors to a minimum because everyone is likely to act badly one day due to prejudices, preconceived ideas, petty jealousy or objectionable habits.

We cannot think of definitively eliminating all these behaviors, which is why it is necessary to establish pre-defined rules of decision-making and anticipate certain reactions when faced with “bad” behaviors.

Ethics is a very complex concept that is difficult to apprehend, because it is present in many disciplines and fields of activity since Antiquity. Ethics is therefore a concept that is both timeless, sustainable (in terms of resilience) and universal.

Since the antiquity, however, unethical behaviors have continuously evolved and are more diversified. As we know, our increasingly complex world continues its complexification and diversification: as a result, business ethics must constantly evolve in a correlative matter and must constantly adapt to the situations and its era.

## **7.9. Generalization: applying ethics to personal life**

1) Compliance with integrity:

– report to our customers and partners honestly and act with skill and professionalism;

- avoid any action that could be reported as a conflict of interest;
- actively support educational growth through training and mentoring to combat illiteracy and to obtain a more inclusive society.

2) Provide professionalism:

- fulfill agreed contracts – aspire to clarity by maintaining mutual understanding and communication;
- respect of legal and contractual quotas and contingencies;
- commitment to sustain the environment through responsible use of resources within the framework of generating products or events.

3) Compliance with diversity:

- promote working relationships based on respect for people, regardless of their origin, race, gender, marital status, sexual orientation, mental or physical disability.

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## Business Ethics: Some Principles and Mechanisms

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### 8.1. Is business ethics useful for everybody?

Professional ethics is a simple extension and application of the notions of individual ethics in our professional life. It can be subjected to a contradictory debate because nature needs antagonistic properties to evolve and adapt: for instance, diversity and uniformity, qualities and anomalies and phenomena of self-organization associated with aggregations in order for new orders to emerge. In the same way, ethics, to our minds, could possess a double nature. Some questions then arise:

- is professional ethics a utopian concept?
- is professional ethics necessary? Is it not a redundant concept?
- in which kind of activities?

#### 8.1.1. *Utopic concept of professional ethics [BOU 10]*

On Internet forums, it is common to see contradictory opinions that are the result of a culture, and living experiences that tend to minimize the effect of a technological, moral or cultural value. Therefore, for some, ethics' objective is "to judge what is good or bad, or to judge the motives and consequences of actions", whereas, for others, the business world for its part aims to achieve profits, whatever the kind of business considered.

Are these antagonistic objectives that just make professional ethics a solution to problems of image, notoriety or good conscience?

In the context of economic crises and referring to a recent paper published in the Rotarian [BAS 11], it was noted that during a major crisis, business ethics is a means, for the well-to-do and dominant social classes, to be able to help the poorest and to give themselves a good conscience or to justify a social attitude in order not to be objectionable.

The question of professional ethics thus arises regularly: even if it is sometimes difficult to position oneself between “ethics” and “professional”, definitely, ethics is not just a leitmotiv.

Similarly, any product- or service-oriented business is based on three pillars:

- research and development;
- production, procurement and supply;
- marketing and sales.

For each of these pillars, the quality and performance control stands upon:

- respect and fulfillment of the company’s systemic and basic processes;
- implementation of invariant processes (Six Sigma rules, lean manufacturing, fractal company, etc.);
- implementation of control, steering and monitoring methodologies and tools.

The question then arises as to how to integrate the notion of ethics, how to define it in this context, and how to measure the impact in each interconnected system. The problem of introducing professional ethics into a company is therefore not easy. Knowing that human nature is often hostile to change, it is normal that there are doubts and brakes.

Such reasoning is wrong, because a simple observation shows that all the above approaches are of technical nature; we must not forget that a human being is also subject to emotions, psychic behaviors, consciousness, etc.

### **8.1.2. *Is the professional ethics necessary, and how? [MAS 10a, MAS 10b]***

Observing the specificities of the environment based on economic crises and the new expectations of society, the very foundations of some advanced technologies used in decision-making information systems and the associated behaviors must be revisited and adapted.

We can address here a few points related to the approach of progress in our society and ask some questions, in coherence with the theory of evolution, in nature.

#### **8.1.2.1. *A smooth and well-balanced development***

Presently, companies have a development approach mainly oriented toward technology and economics. It is important, for reasons that will not be explained here, to ensure high growth rates over short periods. However, we cannot say that the search for a financial optimum is not a necessity and goes against the adaptability: a company is an assembly of sub-optimal systems in interaction with the environment and society. Those that have hidden potentialities are those that can best adapt to the changing conditions of a medium (similar to DNA). It is in this sense that we have to identify and take into account weak signals, underlying criteria and constraints in both the human and social domain. Indeed, the priority is to ensure a consistent and mandatory development of the company or the organization.

#### **8.1.2.2. *Evolution is irreversible***

Nothing stops the evolution: this one is located in the most suitable places for its development, i.e. in the regions that are the most promising in terms of needs, resources and potential development. It is then moving from one location to another, according to the development level of a civilization. Again, it is not only the techniques or technology that intervenes, but also human beings with its social values such as ethics or morals. No one can reverse this momentum, because, in nature, the only priority and possibility (associated with the notions of entropy [MAS 15b]) is to go forward.

#### **8.1.2.3. *Diversity and adaptation***

The diversity and variability of systems is a condition of their adaptation. Unlike mass production systems, it is an advantage for adaptability. In this context, ethics is the only value accepted by evolution, because it is open to diversity and respectful of the laws of nature.

If this were not the case, there would be no possible diversification and this would lead irremediably to a non-optimal evolution, and thus to a dead end. To accept diversity, we must admit the existence of antagonisms; in the same way that we need moral ethics and prohibited behaviors, we need moral and immoral people. In our normality, this statement may shock. However, in the case of a major evolution faced with a “disruption”, also called chaos, it is necessary to have “mutants” and atypical individuals in a population, in order to survive and adapt to an environment totally different. It is a simple question of thermodynamics: to pass from a trajectory (converging path) to another, it is necessary to temporarily accept a degraded situation (Boltzmann’s theorem) to then converge to a better optimal attractor. Here, the problem is not to isolate or reject immorality or immoral situations, but to contain them in acceptable proportions and in a transitory status, so as not to disturb, or stop, the continuous evolution of our society.

#### **8.1.2.4. *Vibration or shaking?***

Finally, it is important to note that very few management and production systems are subject to mutations/adaptations generated by humankind. Generally, they are numerous and quite small. When human beings are involved, these changes, in small numbers, act as a small shaking and contribute to the improvement of local objectives. They must not erase from our memory the previous non-optimal versions because they form “hidden” sequences, some of which constitute a necessary backup to the future evolution of the systems. Hence, the duty of collecting and storing information that is incumbent upon all of us: both forms of “ethics” and “non-ethics” are therefore necessary, either to shake or to stabilize. But in what proportion?

## **8.2. Ethics is also a vocational skill**

In the present modern sense [CAN 96], ethics differs from morality in several ways.

### **8.2.1. *Ethics as a free and individual choice***

Ethics is conforming to one’s concept of good and evil, without any obedience to a morality (Tables of the Law or public lists of regulations and

procedures, taboos, etc.). It is a matter of individual, spontaneous and free decision-making (this corresponds to Bergson's sense, as defined in a paper: "The Two Sources of Morality and Religion", where he contrasts the former closed morals of obligation, with a spontaneous, inner and free exigency of benevolence of his hero). Ethics, in its modern sense, escapes the discredit of morals. Many people, especially young people, no longer want to hear about morality or list of duties imposed from the top, and more particularly from Christian morality (obsessive about sexuality, inappropriate and forgetful of social, class or personal injustices), but they always conform their conduct to moral good. Pascal wrote, "True morality laughs at morals". Ethics, or true morality, is such an inner moral that criticizes traditional morality and current morals, when they no longer fit in the new expectations of the society.

### **8.2.2. *The scientific aspect of ethics***

Ethics has a more scientific content than morality. It is no longer based on a Revelation (as in religion) or the only Reason (as in philosophy, or economic and social matters), but it is supported by all the studies of the human and life sciences (sociology, psychology, neurobiology, biology, anthropology, epistemology, law, etc.).

### **8.2.3. *A limited domain***

Now, ethics often refers to a sectoral morality, i.e. assigned to one field of application. The first kind of ethics was related to environmental ethics (with regard to the demand of young people and "environmentalists" to respect and sustain nature). Then came bio-medical ethics, ethics in warfare, ethics in industry, ethics of stock exchange, and so on. Bio-medical ethics started with the critical analysis of conflicts and cases of consciousness. The results were in a number of debates, discussions and ethical codes (the Universal Declaration of Human Rights – the Nuremberg Code in 1947, the International Code of Medical Ethics in 1949, the Declaration of Helsinki, the Declaration of Alma-Ata in 1978, the Manila Declaration on the ASEAN Environment in 1981, the Principles of European Medical Ethics in 1987, etc.).

### 8.3. The positioning of ethics versus common values and usual codes of conducts

In everyday life, there is often talk about morality in society (for example, morality in finance) and deontology in a given profession (for example, medical deontology). These two concepts make it possible to better regulate exchanges and to establish more normality in the activities. They also concern the behavior of people clusters. They should be defined as follows:

– *Morals*. Morality defines general principles or laws. It corresponds to a mode of functioning of a society governed by “normal” rules (in the sense of mathematical normality) to which a population is submitted within the framework of a general and global interest. This morality neither integrates the constraints of the situation nor the states of mind of the decision maker. Morality ignores nuance, it is binary.

– *Ethics*. Ethics is an individual statement act according to personal values (defects and virtues), in order to seek the right decision in a given situation. Ethics, on the other hand, only makes sense in a situation that an individual is confronted with. Ethics admits discussion, argumentation and paradoxes.

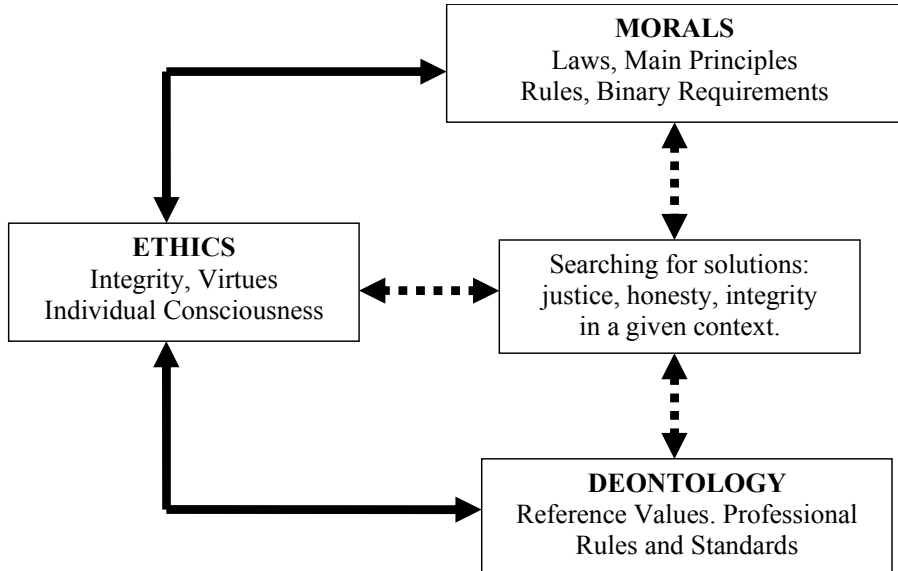
– *Deontology*. In a profession, or a corporation, people are led to act, of their own, according to rules, regulations and procedures. Any decision taken within this framework must respect the internal rules of procedures. This decision, resulting from a “collective” thinking, is subject to a given formalism. The approach becomes deontological in a broad sense. If these rules have a value for the whole profession and are officially agreed as such, then it becomes a code of deontology in the restricted sense.

The code of deontology is a set of rules of procedures and professional practices that are proposed by representatives of the profession. They can be considered as a law, as soon as, for delegation purpose, a state or government has decentralized part of its authority to a “professional organization” such as *Ordre des Médecins* (College of Physicians). Deontology, however, is at the service of a corporation, whereas ethics is at the disposal of a whole good and may call into question a personal interest or that of its corporation.

The professional ethics approach must be based on a moral dimension (we never ignore the main principles and commandments of our society), on



an ethical dimension (which decision is the best and the more honest in this case?), and on the deontological dimension (am I in line with the internal rules and good practice of my corporation?).



**Figure 8.1.** “*Le Droit décide, la morale commande, l’éthique recommande*”  
(the law decides, morality commands, ethics recommends)

#### 8.4. What are the development factors of ethical management?

In economy, the general rhetorical discourse sustained by the companies or specialists in management sciences is increasingly emphasizing the ethical dimension of the enterprise. However, the latter is poorly taken into account in managerial practices, due to the absence of a holistic model integrating both the concepts of ethics, morality and deontology, and the perception of the actors of the profession.

A real development of ethics in practices implies a strong method associating the theory with the experiences of the professionals. The issue is important since ethics is positively involved in all aspects of management:

- management of long-term objectives, ethics/strategy;
- aid for analysis/decisions with a strong stake;

- conflict resolution through discussion and consensus;
- view of integration from the different actors points of view;
- accountability of employees/total quality requirement;
- reduction of control and transaction costs;
- corporate culture, common values, teamwork cohesion, etc.

## 8.5. How to approach professional ethics

Complexity science and the theory of organizations allow us to understand how to evolve management and decision support systems in order to make them more ethical and secured, in the sense of expectations, needs and of general interest of a company. This is a global integration problem, which needs to be solved in a holistic and systemic way.

In each living being, like a plant, an animal or a human, decision-making in a given situation is always guided by a set of antagonistic values since the essential property of living organisms is to be adaptive. This presupposes, for reasons that we will not explain here, because they respond to the constraints of the theory of evolution: diversity, and positive and negative feedbacks between the involved forces and functions (e.g. cerebral or brain activity), in order to rapidly converge towards new equilibria into nonlinear hyperplans.

The intellectual activities and behaviors we are talking about here are guided by antagonistic “values” whose effects are positive or negative; they can be classified into two groups: virtues and vices (good or evil). It must be remembered here that the decisions to be taken must make it possible to respect consensus among the essential criteria of ethics (moral requirements, altruism, etc.), and also to ensure the survival or evolution of a species which, in specific cases, could appear brutal.

Thus, there is a continuous confrontation between complementary and disjointed objectives and balances to be found between opposite “values” such as virtues and vices. The objective is to satisfy at best these sometimes-opposed properties, and to avoid one of them taking precedence over the

other. It will therefore be necessary to constantly find the right interactions between antagonistic values and the right dosages to converge rapidly towards an overall optimum.

In ethics, we promote fair, honest and respectful decisions. They call upon values qualified as “cardinal”, four in number. They are grouped under the term “virtues” and we can say:

- the four cardinal virtues are: justice, temperance, courage and prudence, etc.;
- these virtues make it possible to understand the ethical dimension of decisions in a consistent and structured way.

However, to set-up a behavior, and consequently a decision system based upon the notion of ethics calling only on virtues is dangerous. Indeed, the theory of evolution always shows that “virtuous” systems and few diversified are brought back to regression and extinction. It is therefore necessary to introduce the notion of antagonism to develop disruptive solutions.

- when the antagonisms call for notions far from a collective ideal. We will group them under the term “vice”.

When we look at the economic situation of a country and the evolution of financial systems, with their increasingly frequent crises, we could suggest that there are imbalances between the optimization of a financial objective and moral or ethical requirements followed by the decision makers (we do not speak about deontology, since the rules of the profession are supposed to be followed by the managers). We may be perfectly legal and respectful of the usual practices and customs in a corporation, but the outcome may be perfectly immoral and unethical in relation to society and/or individual interests: here, some key decision makers, including the CEO, could be responsible but not guilty.

This situation is normal, since people who are depending on a company are subject to constraints (those of the stakeholders or shareholders), and they do not care about an overall effectiveness because they sometimes act (as required) according to specific and local interests, under the stress of some greedy shareholders who wish to “tumble” their revenues.

### 8.5.1. Some words about ambivalences

In view of what has been said, vice is the antinomy of virtue. Referring to the virtues listed above, we can quote their corresponding vices: egoism, iniquity, outbursts, cowardice and temerity, etc.

These characteristics (grouped together under the generic term: quality) are emphasized in any operation intended to create diversity or, more exactly, differentiation. On a local and short-term basis, it is sometimes on these “qualities” that authoritarian management systems or “predator–prey” systems are built. To be more complete, we can consider the table of antagonisms (Table 8.1). The question now is how the mechanisms of evolution can be implemented?

<i>ETHICAL VALUES</i>	<i>VIRTUES</i>	<i>VICES</i>
	Altruism	Selfishness
<b>Cardinal Virtues</b>	Justice	Inequality, bias
	Temperance	Excess
	Courage, fortitude	Cowardice
	Prudence	Recklessness
	Care	Contempt
	Modesty	Pride
	Benevolence, softness	Agressiveness
	Solidarity	Individualism
	Cooperation	Competition
INSTITUTION	Respect and Compliance with the normative	Deregulation

**Table 8.1. Antagonisms**

### 8.5.2. Ethics: an evolutionary concept

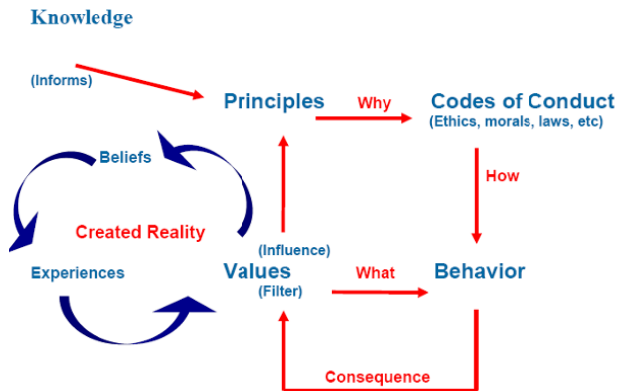
The objective of this section is not to talk about evolutionary ethics. We are simply trying to understand how the underlying factors of ethics can evolve overtime. That may help us in understanding how ethics or morality can evolve and adapt to new environments. The notion of ethics is quite broad and can be studied through three axes:

1) We could first consider *descriptive evolutionary ethics*: it seeks to explain various kinds of moral phenomena wholly or partly in genetic terms.

Ethical topics addressed include altruistic behaviors, an innate sense of fairness, a capacity for normative guidance, feelings of kindness or love, self-sacrifice, incest avoidance, parental care, in-group loyalty, monogamy, feelings related to competitiveness, etc. This is partly what we have studied in the above section, when introducing the notions of ambivalences and associated equilibria.

2) We will not discuss *normative evolutionary ethics*: it aims at defining which acts are right or wrong, and which things are good or bad, in evolutionary terms. Chapter 4 is merely *describing safeguard principles*, and *prescribing* some goals, values and obligations. Therefore, we will not recall those things.

3) For some ones, it is recommended to approach ethics through the so-called *evolutionary meta-ethics*. It is based on views of human activities relying upon the Aristotelian teleology. It implies values, feelings, BDI or well-being considerations that will modify the perception of ethics over time.



**Figure 8.2.** <http://1.bp.blogspot.com/-bcqdcMnEO2w/Tt6tGOHMyzI/AAAAAAAAAig/uzOxJcjHVxQ/s1600/V-B-E-P-C-k.png>

This figure is interesting because it contains basic learning principles. According to goal-directed accounts of real human life, flourishing or experienced contexts, the human beings will evolve. Associated with a number of ethical moral responses, attempts to debunk or reinforce beliefs

and moral realities, or to support some moral skepticism and so on, human beings are able to adapt, then adjust their own vision of ethics.

4) To improve our personal behavior, the four afore mentioned cardinal virtues have to be updated and completed considering the evolution of our society. Indeed:

i) Contemporary people are still dissatisfied with the insufficiency of justice.

ii) The modern era insists that moral dilemmas are not based on the simple opposition of good and evil but, more frequently, by greed and selfish attitudes. So, more realism and common sense antagonisms have to be prioritized.

iii) Considering the complexity of our universe now dominated by interactions and networking, the primary identity of being human is not as an individual with powers and functions needing perfection, but as a relational rational being whose modes of relationality need to be made virtuous or to be rightly realized: we have to be open to the world and communicate!

We will remind that, in enhancement, five centuries ago, someone suggested the three Bible virtues of: Faith, Hope, and Love (theological virtues). Additionally, they add: be humble, be hospitable, be merciful, be faithful, reconcile, be vigilant, and be reliable. This totals to 10 new virtues to replace the four cardinal virtues.

Since this is not satisfactory, many people were acting for a long time in compliance with ambivalent virtues and sins as follows:

– The seven virtues: Prudence (*Prudentia*), Chastity (*Castitas*), Temperance (*Temperantia*), Charity (*Caritas*), Patience (*Patientia*), Kindness (*Benevolentia*), Humility (*Humilitas*).

– The seven deadly sins: Lust (*Luxuria*), Gluttony (*Gula*), Greed (*Avaritia*), Sloth (*Acedia*), Wrath (*Ira*), Envy (*Invidia*), Pride (*Superbia*).

To simplify the problem, we will go back and base our philosophy on the simple virtues and associated sins as described above.

### **8.5.3. Evolution of species, development of the society**

The following is an approach unique to every living being. It can easily be transposed to the economic domain. It is also an approach that is observed in immunology, in the study of the evolution mechanisms and the biological defense of an organism.

In the field of improving a technical, economic or financial system, the decision-making and management processes include a number of operations such as: (1) identification of diversified states of a system, (2) elaboration of differentiated answers or solutions, (3) positive or negative selection of solutions, (4) elimination of less good solutions or unfortunate candidates, etc.

To go back in more detail on the steps of the process, we distinguish:

– Stage 1: Creation of diversity.

It is due to influences, disturbances, deviances or modifications such as: mutations, pairings, combinatorics, addition or elimination of basic components (nucleotides for DNA at the junction of genetic segments, parts or subassemblies in a computer, etc.), changes in procedures or in organizations (commutations, recombinations → pattern recognitions, expressions of genes or proteins, models assemblies at the level of an end product, sequencing in road traffic, etc.). The creation of diversity is quite unlimited, although in some cases it disturbs neither the main constants of the domain in process nor the combined expression of several genes.

– Stage 2: Differentiation.

Differentiation is the property observed at the level of a finished product. It is exercised in terms of its functions, its characteristics and its effects on the global environment. The differentiation that results from this diversity has an impact in terms of efficiency and performance. This is because, during the assembly of the product, we can elaborate more or less evolved products, new options or arrangements (in the case of genes), new or more favorable priorities or capacities, etc. Under other conditions, hyper mutation can affect the maturation and reactivity of a system, solution or reaction to a problem. Other changes may affect the inhibition or activation of a key element or gene, and so on.

– Stage 3: Selection.

Selection is a kind of ranking or classification problem. It concerns the identification of effects and properties, then sorting and ranking possible solutions. The selection is of two types:

- the positive selection that consists of putting forward a more reactive element or solution when faced with a given situation: it may act positively with other elements (or molecules in biology). It is like a catalytic amplification;

- the negative selection where the self-reactive elements too reactive with respect to their close neighbors are eliminated, because they create imbalances that are too strong or expensive, respectively.

This selection procedure, in the case of positive selection, is similar to apoptosis in biology, whereas negative selection is equivalent to an inflammation, then to a destruction or necrosis in biology.

– Stage 4: Decision and action.

This operation can take various forms and could manifest itself as the following:

- actions, implementation of corrective or preventive solutions;

- reproduction, multiplication or proliferation of the resultant products that are better adapted, more efficient and efficient (or proliferation of a favorable effect or gene in biology);

- exclusion of individuals or deviant systems, or allelism (rearrangement of a productive gene, restriction, limitation or termination of rearrangements, etc.), this stage corresponds to a localization or isolation operation, and therefore to a stabilization of a situation or a balanced system;

- induction and/or replication of new changes;

- elimination of the least successful candidates.

Here, as in the case of evolutionary theory, we must place ourselves in a process that favors local efficiency. We act selectively, sometimes brutally, and so as to obtain as quickly as possible a solution best suited to a new



situation. It is a question of reactivity and survival that integrates the notion of sacrifice (intended or not) and that does not take into account the superior interests of a population. We are, indeed, in the world of life sciences and not in the world of culture or consciousness. It is for this reason that this approach has evolved, as we shall see later.

#### **8.5.4. System evolution with regard to cultural and consciousness considerations**

To complement and globalize the conventional approach to evolution, it is essential to take into account two techniques or methods: the systemic approach and the integration of more advanced concepts such as cultural factors and notions of conscience and integrity. We find these in the fields of morality, deontology and ethics.

Concerning ethics, this notion is often approached from the point of view of virtues. Indeed, virtues present advantages in terms of method: they are incentives to act, and allow a declination of ethics into reference behaviors, in a given context. It is thus possible to construct data and prescriptive repository of the ethical business dimension at the level of an individual to help him make choices and decisions.

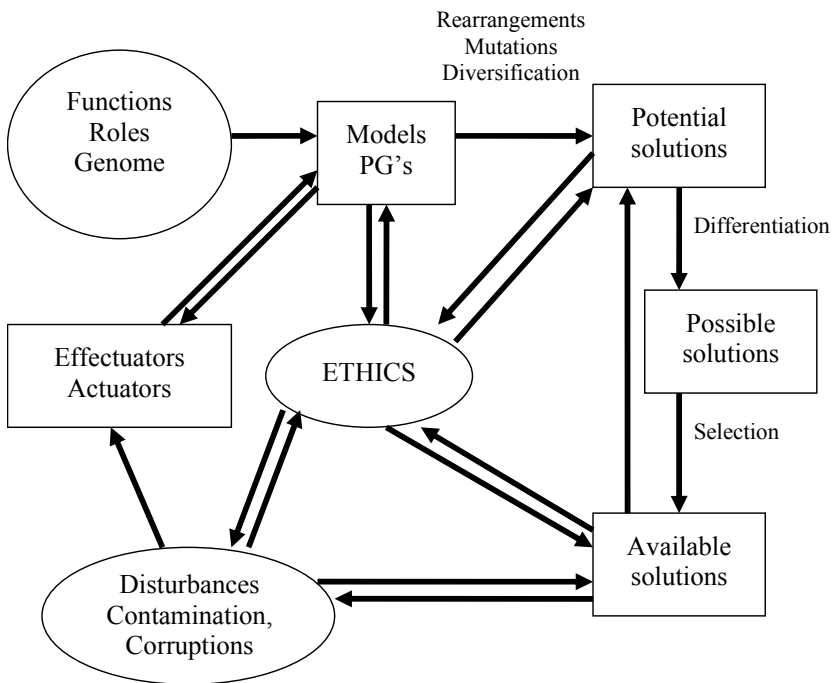
#### **8.5.5. How can we modify the challenges and activities?**

The question is to produce goods and services, as efficiently as possible, by being efficient and useful to society. But to be sustainable, we must respect the rules of integrity and good practices in use in society, in a professional sector and in our consciousness.

The way to manage an organization (driven by a corporation with little humanism, anxious to save itself and seeking “fabulous” and fast results) and the way to implement business ethics (guiding an individual behavior sometimes a little idealistic and altruistic) can be summarized as follows (Figure 8.3).

There are many interactions between the two approaches and it is easy to see in these close-looped systems that positive and negative feedbacks will

hardly lead to global balances. Indeed, some will attempt to parasitize the system, to direct it in order to obtain greater net revenues for some beneficiaries, as predators do. Others, in contrast, will have to be morals (in the general sense of the term) without forgetting to be realistic ... while maintaining relations and the development of collective approaches. In view of this model, we cannot anticipate and foresee the evolution of the situation in the future; but, on the other hand, we can modify the operational strategies and adjust the control parameters to make it possible, according to a desired situation.



**Figure 8.3.** Business ethics process in an organization

This is where the notion of professional ethics may have a very strong influence. Indeed, one of the main objectives of professional ethics is to reconcile a society around a common project, i.e. to unify the elements or

agents of a population in order to achieve what is called an “inclusive society”. This involves a specific strengthening of human relations (what Mr. Volle called in his course, on economics, at the School of Mines, in February 2010: the “trade of consideration”) to bring together efficiency, effectiveness and morality. This approach of professional ethics responds well to this demand since the virtues that are put forward are the following:

- respect and friendship: which is translated to “manage affinities”;
- benevolence and listening: which means “reconciling affinities”.

### **8.6. Professional ethics: toward an intelligence of weakness [ROU 04]**

With regard to our experience in industry, our job was to listen to the world of business and compare it with other worlds, and try to send it back the tools to help provide advances in competitiveness.

At first sight, it has been very interesting to note a degradation, in the ethics crisis, since the 80s, and to understand, fundamentally this crisis that goes beyond the framework of professional ethics. However, the questioning of business ethics falls within an economic context of launching again new investments in Western countries, by improving shareholder remuneration and giving more power to finance, which in turn triggered a moral crisis.

Some attribute personal behavior to ethics and collective values to morality. In fact, everything revolves around humans and the question is to know what are the human references from which our action, whether personal, private, public or collective, can be based.

But the references on which Western societies have relied so far are questioned. In the past ([MAS 06a, MAS 06b] and then [MAS 15b]), we highlighted the fact that economic crisis was associated with the lack of competitiveness of entire sectors of activity, and the lack of adaptation of some civilizations. Three main factors were identified: the lack of skills, ignorance and greed. Under this analysis, we also have to note that our world is imbued

with a global and humanistic vision: over the past two centuries, and despite political, military or economic surges and deviances, this vision has been marked by human rights and the formulation of its defense, as embodied in all the values they encompass: human well-being based on respect, dignity, equality, fraternity, etc.

### **8.6.1. A societal crisis. In terms of ethics, many changes have occurred**

The pragmatism that comes from our agricultural origins has been considerably undermined over the last few decades, for several reasons:

– the first is that the economic world (open and global) is much more complex today than it was a hundred years ago;

– the second is that the economic and financial tools today represent a considerable power. It is no longer possible to act independently of the others. The human being is overwhelmed by the power of the means and technologies he has implemented, means which begin to escape his understanding and therefore his predictions;

– the third major change concerns the rules of the game, which are no longer respected, each state, each company owning its own. As a result, it seems extremely difficult to develop international rules of the game. Thus, the notion of “common good” is a notion that slowly becomes foreign to our contemporaries. In fact, our societies today know very well what they do not want, but they know less and less what they want collectively;

– the fourth change begins in the 1970s, when it was said and proclaimed that everyone “could have the vision he had, and have the values he had”. Since then, social development has accelerated in a heterogeneous way and has led to very different situations from one country to another.

We can quote the weight of pensions: will the young people make the effort to pay them? The tendency of some countries is to forget or isolate the “old”. It is in fact the serious problem of respect for the other, and its significance today with the young generations. Human rights are the subject of many interpretations, but generally speaking, to the benefit of those who do so. They are perceived as a right more than a duty.

### **8.6.2. *The weaknesses and consequences of professional ethics***

Until now, professional ethics has been based on three pillars. What has become of them?

1) First pillar: a long time ago, the fair contract, based on absolute respect for the given word, was not, strictly speaking, a commercial contract but a personal contract. Today, the fragility of the economic context raises serious suspicions about the authenticity of any commitment either of a manager or of a company. What can he promise, for how long? Is it truly credible? What elements does it have to enable it to comply with the contract, taking into account competitiveness and economic constraints?

Over-reporting of non-compliance with contracts and enforcement of labor law is so intense, especially among the younger generations, that the basis for establishing fair contracts has become an extremely fragile. Today, a fair contract has evolved towards the model of the commercial contract: it is a legal document containing thousands of pages. Thus, it is a contract that can be closed or cancelled any time, for whatever reason, by either party, without the least emotion or the slightest notion of commitment.

2) Second pillar: the combination of quality in the profession and respect for people is a fundamental management focus. Today, the profession is essentially subject to the economic constraints which, in many cases, prohibit the acquisition of assets due to lack of time. To summarize: we exchange a salary against procedures to be executed. In fact, economic factors took precedence over the concern for the qualitative apprehension of a profession (craftsman) in which the person should have flourished.

It is the consumer, under the pressure of social networks, and therefore the commercial aspect, which dominates, engendering a world much more fuzzy in terms of respect of people. Consumption is based on the impulses of desire and possessions, on surpluses of needs that need to be managed, and there is so much to manage “that there are specialists and psychologists that care of your worries, and manage your intents of possessing too many things”. The whole economy is based too much on market recovery and economic growth.

What is respect for people when the influence of marketing, through advertizing, handles you during the whole PLM (Product Life Cycle Management)? We are permanently stressed by false emergencies, once we have consumed what was expressly advised. Then, we cannot find the happiness that we were promised, and we feel frustration. It is a good way to buy something again, but the duplication of such frustrations creates depression.

3) Third pillar: honesty. The problem today is that we are more and more lost to understand things. Because of the complexity of the systems, we have to manage beyond an ethic of respect for the law, and beyond an ethic of reason, we must integrate the so-called “Ethics of discrimination”.

The ethics of discrimination is to accept that things are not simple, that they cannot be simplexified, and that it is therefore important to try to discriminate, without ever being certain that one is right. It demands more intelligence and understanding rather than reasoning. We must therefore have an ethics of intelligence, for it is no longer sufficient to have an ethics of reason. We require an ethics of intelligence through which we learn to discriminate what belongs to the economy and what belongs to the intrinsic intelligence of the trade.

Presently, the global economic system is not people-oriented. Its only principle is the self-preservation and self-development of an economy. Consequently, the ethics of discrimination is learning how to preserve, encourage, and allow human society to grow, whatever the complexity and the violence of the context in which it exists. This would allow us to promote social growth, seizing the various opportunities that exist within our current economic context (the same holds for politics). This is why, today, career plans no longer exist, and neither do highways of morality and ethics.

The ethics of discrimination consists, in a company, of finding the paths of “good”, in seeing and speaking truth: that also requires an ethics of courage.

We must move from the collective, practical and somewhat hypocritical consciousness to interpersonal trust. The younger generations are a bit too much sucked by its neighboring partners. They are often too merely and emotionally influenced. Interpersonal ethics oblige us to go down in the arena and require personal and face-to-face relationships. The leader must

first consider a person as a human being, in his relationship with his collaborators, before having a hierarchical role. It is a new way of collective management called co-responsibility, i.e. people's commitment to each other. We are now faced with the crucial problem of professional ethics today, which is the key issue of fragility. This third track shows how the world we live in is responsible for our fragility: this is due to the loss of our landmarks due to pressure from the economic systems, the pressure of the media's and the environmental stress, knowing the anxiety in which we live and knowing that such concern can be continuously amplified by the media and information (feed-back loops). The big question is whether this fragility will continue to scare us or whether we will be able to learn to distinguish what is relevant to either fragility or weakness. Indeed, even if both words are confusing, their processing is different.

## 8.7. Conclusion

Weakness is a result of ignoring intelligence or ethics (in terms of understanding the others) and a lack of courage in fragility. It is becoming a focus in our Western world. All the actions have to tend towards the control of fragility, which is related to the resilience of the human kind. In terms of sustainability, human beings are a weak link, because of their complexity (we will detail this in the next chapter). They are however, convinced that they are a strong species and they will live long.

This is a heritage of our Christian culture: the purpose of morality is to transform and enhance the human species, then to bring him into a kind of systematic perfection, of which secularism has inherited. Today, this is neither a smart nor a pertinent approach because it is simply false. Even in the Gospel, fragility is highlighted and must be taken into account, no longer as a marginal defect that must be eliminated, but managed by social protection and seen as the essential component of human wealth. This is one of the biggest problems facing the company today. Fragility is a huge challenge, perfectly illustrated by the real integration of people with disabilities, not because we have a good conscience by integrating them, but because accepting the presence of people with physical or mental disabilities revolutionizes management: it is just a way to reduce any kind of exclusion, because of the sustainability of our world.

Ethics is revolutionizing companies because we have gone beyond the physical fragility of a disabled person, and we have begun to take into account the invisible and mental fragility of others.

We obviously feel better when we begin to deal with our fragility rather than deny it. It is therefore the understanding of fragility which is the great intelligence to be developed for tomorrow: human kind is becoming more and more stressed and is a weak living being in a more difficult and complex environment.

A human being cannot grow if he does not rely on others: we need to trust one another. By knowing, by definition, that the more one has authority, the more fragile one is. Beyond this, and this is very interesting, appears behind this intelligence of fragility, the discovery of what human identity is and the possibility of escaping from a “forcing” life, in order to give the possibility for the human to continue to grow, without ever reaching perfection. This means that in the company and in professional life, it will be necessary to develop an ethics for helping and supporting everyone: this is why we introduced the notions of coaching and leadership. The myth of self-sufficiency is no longer valid for achieving ambitious projects.



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## Ethics in Enterprise: Towards Z-Management. Coaching and Championship

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### 9.1. Introduction

In companies, the values and conventional codes of management regularly evolve. Changes are driven by the evolution of digital technologies, social networks, and the changes of society which make the hierarchical control of employees inoperative. Also, the strict control of a production system with fixed rules and procedures no longer works.

Indeed, the ways of working differ: just as autonomy in the production or processing industry is developed through robotics (in the broad sense), the workers and individuals, too, thanks to the Web and robotics, increasingly require autonomy.

New management styles must find new ways of motivating and mobilizing employees, thus giving people the desire to excel in exploiting the synergy of collective and collaborative approaches, the buzzing of ideas and the dynamism of the new generation.

At a time when the notions of leadership are put forward, is it sufficient? What are the opportunities provided by the “coaching” or even “championship” approaches? They must be adapted to the present environment and needs: in addition to the conventional ethical values, new

shared values are emerging (thanks to the Web) which also have to be taken into account.

## 9.2. Ethics in enterprises

Today, in several sectors of activity, 85% of people show little or no involvement at all in their work. No one wants to sacrifice their life for work. Is it an ethical attitude? Do modern-day companies meet the expectations of society and employees?

In fact, large companies are like big cruise liners: to operate in a constrained or limited space, and in hostile environments, they must protect themselves, be able to react (flexibility) and be adaptive in order to overcome medium-sized disturbances. Most of these companies are governed by validated and proven procedures to correct gaps and deviations that may occur. They are controlled by sometimes very strict quality and performance indicators (such as Six Sigma) to detect and prevent drifts. The management system [MAS 06a, MAS 06b] requires a harmonization of profiles, because society, in order to function in a stable way, cannot accept the tails of distribution: these tails comprise either disturbing or “unskilled” people (negative productivity) or too many talented people (who also slow down the productivity of the whole).

The cause of such problems is due to the fact that many large companies are like eco-systems: they are quite closed-off from the external world, and they have steady stable processes, few subject to disturbances. Consequently, they have a great inertia. Overtaken by advances in society, with a limited adaptability: they are quickly disconnected from the reality and submitted to fragile equilibrium.

Therefore, we have to be very careful with what is happening to sustainable systems [MAS 15a]: what is helping the resilience of a system is also preventing its adaptation. Ethics, in the same manner, is not to be used as a stabilizing factor.

EXAMPLE.– To illustrate what has been said about the elimination of the distribution tails in a population, we will detail a real case study. Indeed, two decades ago, it was common in large companies to provide an evaluation system based on performance measurement.

Let us consider the distribution graph below. It is a density function, where  $\bar{X}$  represents the average (mean) of the process performance, the ordinate is the density of the distribution ( $Y = F(X) =$  number of people or percentage of people), whereas  $\sigma$  is the standard deviation of the process. The process capability is expressed by  $C_{pk}$ .

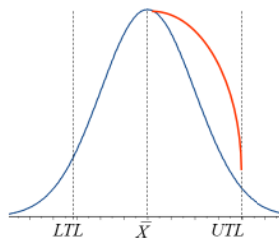
A process is  $k\sigma$  capable if  $\bar{X} + k1\sigma \leq UTL$  and  $\bar{X} - k2\sigma \geq LTL$ , where  $K1$  and  $K2$  are pre-defined standard deviations for Upper Tolerance Limit (UTL) and Lower Tolerance Limit (LTL). In the following graph, the calculations are made with  $k = K1 = K2$ :

- $C_{pk} < 1$  means the process is not capable at the  $k\sigma$  level;
- $C_{pk} \geq 1$  means the process is capable at the  $k\sigma$  level.

As seen hereafter, we can associate the notion of process capability with Human Resources Management (HRM) (Figure 9.1).

#### HRM: Capability Index ( $C_{pk}$ )

$\bar{X} = 10$  and  $\sigma = 0.5$   
 $LTL = 9$   
 $UTL = 12$



$$C_{pk} = \min \left\{ \frac{10-9}{3 \times 0.5} \text{ or } \frac{12-10}{3 \times 0.5} \right\} = 0.667$$

**Figure 9.1.** Process capability measurement and control in a Gauss distribution. For a color version of this figure, see [www.iste.co.uk/massotte/ethics1.zip](http://www.iste.co.uk/massotte/ethics1.zip)

In Figure 9.1, we suppose that the medium performance of some human resources is rated:  $\bar{X} = 10$ . Also, UTL, standing for “Upper Tolerance limit”, defines the limit above which too many skilled or over-qualified people will create disturbances. Therefore, either they leave the company or they try to integrate the skills and profiles needed by the company. Under these conditions, they will form the elements included between the red and the blue Gauss distribution.

The same approach will be applied at the LTL level of the curve: the low performing employees either leave the organization or improve their capabilities in order to continue participating in the system evolution.

Through this approach, we put emphasis on the company organization while the employees are just considered as components. Quite often, the solution to a problem is not a technological one, but an improvement at the human relationship level. This is what we will study in the following part of this chapter. Indeed, the objective is not to hire or fire people, but to do the best with what we have; this is a role devoted to ethics.

### **9.3. General ethics: comments about the conventional approach**

Assessing a situation and deciding based on our own intelligence (rationally) is not enough. We must also listen and act according to our heart, and therefore our emotions. Finally, we must also follow our intuition and act according to our ethics.

To be complete and to comply with what has been said in Chapter 4, ethics will be a combination of responsibility and conviction type ethics.

We will see later (Chapter 12) that our behavior is related to the presence of several distributed brains and that any decision results from the interactions existing between them. All the identified approaches, whatever their underlying mechanisms (collective intelligence, sharing,

collaboration, cooperation, etc. with their ambivalences) are complementary. Therefore:

- intelligence gives meaning to what we do and leads us rationally;
- emotions make it possible to evaluate and analyze a situation according to our feelings and to estimate the costs, risks, advantages and disadvantages associated with a solution;
- intuition and ethics allow us to “feel” and evaluate the impact of a decision, then to estimate and weigh the importance levels of qualitative variables, such as a “good” decision, the “fair” and the “right”, of a proposal or the notion of “acceptable solution”.

As Henri Bergson said: “We must act as a man of thought, and think as a man of action”.

Thus, intuition and ethics allow us to model an ideal in our minds, then to select a more strong and acceptable solution. In short, ethics enables us to better assess an innovation or a potential novelty.

Indeed, when one changes a paradigm, or innovates, we need to be guided by an idea, a vision or by imaginary objectives, i.e. a virtual model of the reality to which we would like to move towards and to obtain.

This allows us to describe the new styles of management that are emerging from the evolution of our society.

#### **9.4. New ways of management**

New ways of management are required because of the introduction of new technologies, as we will see in a later chapter. They are also required due to the arrival of a new generation of people called Millennials, which are emerging in enterprises and will get new ideas and habits.

The Millennials, also called “digital natives”, generation “Z” or Wiki, are living in a virtual universe and look for the best balance between their

personal and professional life. Their behavior is different from previous generations, and their conception of ethics will certainly be adapted to this new environment.

Indeed, in terms of behavior, the new generation of people is characterized by a strong Internet culture. Consequently, they will demonstrate some propensity to:

- immediate, reactive and ubiquitous actions;
- flow management is preferred over stocks;
- money is not the priority, but ideas and dreams are. They are empathetic and creative;
- psychological P2P: hierarchies have their favor, just like coworking or shared economics, as the need for hierarchies and the presence of seniors reassures them: it is not a matter of upsetting the way things are done, but of doing better;
- a need for attention and listening; coaching but not of direct management: hard skills are not preferred. The agile manager is the one who knows how to transform himself into a coach, accept the criticisms of subordinates, discuss proposed decisions or alternative solutions and agree to make them evolve; they can say “thank you” and acknowledge the merit and values of others;
- reactivity: making fun of formalism and fixed protocols, they do not hesitate to contact who is necessary to progress in their project (using a short, clear, precise and concise wording) in the format of Twitter or Snapchat;
- equity animates them, and their leader must be in their image; it is the end of privileges and princely offices. They show some respect for skills but not for the hierarchy;
- transparency is required for both financial and operational matters. The strategic and tactical options must be known, make sense or be meaningful. The work they have chosen must match their personal values;

– you have to explain the reasons for actions and decisions (why and how): if this does not suit them, or does not match, their motivation, mobility prevails and they immediately change their way. They need to organize the work in their own way and are not in favor of presentism;

– their impatience, reactivity and mobility are reflected in their way of doing things: they are not marathon runners but highly committed sprinters.

As a summary, we can say that ethics and values drive the relationships between the Millennials and their employers.

### **9.5. Generation Z: evolution theory**

In fact, the Millennials are not a paradigm shift, but a simple evolution. They are only one of the transformation factors of our society. At the conceptual level, here we find through their attitude and behaviors, some underlying mechanisms specific to complex systems and to the theory of networks.

From a technical point of view, we will take back the functioning of an organization comprising an interconnected set of autonomous people: the Z's want to work in autonomous project teams, and the conventional management approach is gradually evolving into "self-management". This society is not yet a full "holacracy", i.e. without leaders: indeed, we always need metarules and common guidelines, so that the whole can work. The project management, however, becomes highly decentralized: as for in our real and everyday life, it is a kind of self-organization that emerges, and the people embedded in a collective and collaborative environment are sharing responsibilities and consensus. Managers and the managed are only the nodes of the interconnected working network: all are subject to the same rules and each one plays a specific role of its own (as in a community of ants). The operating procedures and job description are those corresponding to a hierarchical organization, but they are revisited to be adapted in this new context.

Indeed, in a self-organized system, the evolution of the system (hence of a global project) calls upon the principles of emergence and aggregation [MAS 13]:

- the organization of work and the synchronization of activities (due to SIC) is based on the fast and frequent kickoffs. We evaluate the work done during the previous day (or last week) and adjust that of the short period to come. This is the principle of “takt-time” or “time cadencing” which is transposed from the world of industry and transportation to the one of services;

- we are dealing with reverse engineering processes [MAS 15b]: the project is built through a brick-by-brick aggregation, but not in a rigid and planned way, because in complex systems, we cannot control and manage every component in a centralized way. The planning and scheduling of any global option (evolution theory) is quickly becoming obsolete. As in reverse mentoring: it is the youngest employee who has to train and integrate seniors. As in a reverse feedback process, it is the employees who evaluate the hierarchy. As in reverse engineering, these are the basic components which elaborate the holistic project.

### **9.5.1. Some recommendations**

In terms of ethics, the basic principles include the notions of respect, justice, empathy, modesty and altruism. Indeed, it is necessary to be both benevolent and trusting to the younger generations, while boosting and respecting the old generations that allowed the company to evolve, mutate and be what it is today. The notion of subordination will be progressively replaced by that of respect and listening to the partners.

In terms of ethics, it has often been said that our consciousness pushes us to fight greed, the impacts of lack of skills and ignorance. Knowing that younger generations are not addicted to greed notions, in their early working days, the aim of a leader will be to dominate his conventional reflexes and to facilitate the work of others, to push everyone to question themselves, and to make progress.



The next point will be to ensure that, as encountered in worldwide companies, the notions of “straight guy” (the inflexible and cold manager) or game leader (who only swears by results and competition) are counterbalanced by their ambivalences: the coach in the first case, and the nice guy (empathic, transparent and sharing) in the other. All this for the benefit of the greatest number of employees.

The role of ethics will then be simply to manage conflicts of interest and to help resolve problems of integrity and impartiality. Finally, one role assigned to ethics will consist of recognizing unethical practices that emerged from a collective action, but were applied by each member of the team. This doesn’t require planning, but leaving a “space of time”, to think and brainstorm, for the actors, agents or employees involved together in a project (whether for professional ethics or in other fields of concern).

## **9.6. How to implement business ethics in a Z-company**

### **9.6.1. Guidelines for ethical business practices**

In many companies, Guidelines for Ethical Business Practice are intended to provide individuals and organizations involved in the business with generally well-accepted principles of conduct.

These guidelines are related to high levels of ethics based on fair and ethical principles. They include:

- peer review committee to compare results, complaints and satisfaction surveys with the standards, CSR and objectives of the company;
- guidelines that represent the general philosophy and self-regulatory measurements;
- self-regulatory actions are more readily adaptable to changing techniques and economic and social conditions. They address the main practices of a company and must cover dishonest, misleading or offensive actions against the others.

### **9.6.2. Implementation**

Another comment is related to the way we implement the process of ethics. It is a general philosophy shared by any employee and exemplified directly by the top management. To help in implementing such a philosophy, a relevant organization has to be set up to ensure:

- a gradual and soft implementation;
- human, friendly, honest and relationship oriented;
- education and training of ethical managers (in some companies), this requires a 5 week effort with a panel of MID tools to follow, survey, measure and evaluate the ethical level of the company;
- guidelines which will include basic principles of ethics, “real references on which everybody can refer to”, recommendations, etc.;
- consistency check of practices.

### **9.6.3. Organization**

It is intended to keep the spirit and practices of ethics alive. This approach is based on:

- management involvement: first, as an example, then to manage and resolve ethical dilemmas;
- steering committee, in order to manage all the issues resulting from professional actions, education and implementation problems;
- an ethics manager who will be assigned to follow and coordinate all the questions, actions and sensitization associated with ethics.

## **9.7. Responsibility of organization members, application principles**

These above notions and principles apply to all the human relationships with current and prospective customers and donors, i.e. stakeholders, and are the grounding for all the employees in a company whatever the business processes considered, as well as to government and administration agencies and “SOHO” (small-office/home-office) entities.

By contrast, each employee clearly, honestly and accurately has to work on their project, products or services. They will always try to accomplish their mission in accordance with the request of the management. Also, they have to follow the spirit and letter of the laws, rules and internal regulation procedures associated with the guidelines established for better and up-to-date ethical business practices.

Finally, we will recall that the purpose of a leader is to foster and recognize ethical behavior among both our current and future business leaders.



**Figure 9.2.** *The rights lanes (source: San José Rotary Club)*

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## Ethics and Complexity

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### 10.1. Preamble: immersion in a world of complexity

Complexity is everywhere: it is inherent and part of our environment since its origin from initial simplicities. Complexity has an impact on the economy, our systems' behaviors, our decision approaches and so on, mainly in terms of uncertainty and unpredictability but also in terms of ethics itself: not because of environmental conditions but due to ethics' intrinsic complexity. This complexity is carried over into unpredictable behaviors and, most importantly, disruptive paradigms.

### 10.2. Introduction

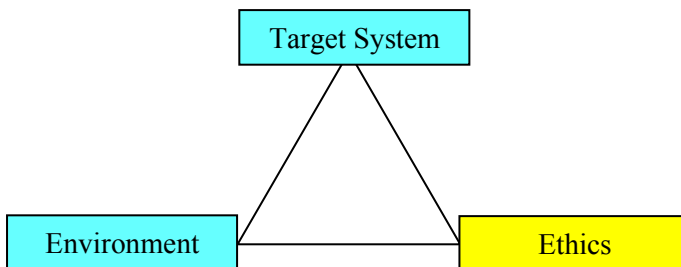
The objective of this book is not to detail the foundations of complexity sciences but to remind ourselves of some of their basic principles, properties and characteristics as well as to understand at what point and how ethics will operate in decision processes.

For our understanding we will only highlight some significant points which developed at a course on Ethics taught during a meeting at the BDA (*Banque du Développement en Afrique*) in 2014. This was also taught in the Rotary District 1700 in 2012 (RYLA, whose subject was centered on business ethics).

We can define the notion of complexity through its characteristics. First, complexity has nothing to do with the complicated: the complicated is due to the fact that the system we want to study exceeds our level of understanding and cannot be modeled appropriately. By contrast, complexity corresponds to a deterministic system; it is easy to model but bears nonlinear characteristics and sensitivities to initial conditions (SIC) such that we cannot predict its future evolution and is often associated with chaotic phenomena.

In what follows, we remain in the domain of the complexity of a system under study. Thus, the question that arises related to ethics is: can ethics be complex? Is it intrinsically complex?

The notion of complexity will be approached in a holistic way by considering the following three components: the target system that we propose to control, ethics in the decision-making system and the external environment (Figure 10.1).



**Figure 10.1.** *A complex of three complex subsets*

As these three components are in a mutual interaction, we can consider them either individually (for their intrinsic complexity) or two by two in order to analyze their resulting extrinsic complexity.

### **10.3. Different types of complexity where ethics is involved**

In this part of the chapter, it is of utmost importance to know why ethics is needed to control the solving of problems in complex systems. Also, it is essential to define in which circumstances and how it can be implemented.

This requires reminding ourselves of the different types of complexity we will consider in industry and organizations management. For that purpose we have established, within IBM Manufacturing plants, the following typology [MAS 17b]:

1) *Behavioral complexity* in which the resulting interactions can lead to non-predictable behaviors, evolutions or emergences of order. These systems are often characterized by models and laws, generally simple but sensitive to initial conditions (SIC). This is the case of cellular automata in the metabolism, transportation traffic in a highway and so on: it is easy to describe how each entity operates in the model but it remains difficult to describe a global behavior and its dynamic evolution.

Such systems are generally subject to chaos theory [CEA 88] which leads to “self-disruptive” systems [MAN 75]. This theory involves “simple” systems, which correspond to two or three degrees of freedom; however, their behavior is unpredictable and infinitely complex because it goes beyond intuition (convergence of a multidimensional attractor). However, the theory of deterministic chaos has also shown how some systems, when placed in specific and “far from equilibrium” conditions, can suddenly “switch” (quantic jump) into new and more or less ordered stages. This property is used in self-organizing phenomena that are the basis of self-adaptive and self-organizing systems: they essentially cause a change in the architecture or structure of the system rather than in its state. Self-organized systems are always open systems, in interaction with their environment to which they can provide an entropy in excess.

2) *Computational or structural complexity* that arises when the number of elements (variables) to be taken into account, as well as their properties, becomes too high. The computing power available is not directly able to solve these models by modifying optimum search techniques, by searching for a more efficient programming language, by regularly “reformulating” the problem (simulated annealing or genetic algorithms) or by playing tricks (programmer skills). Here, we integrate solving approaches from physics, biology, chemistry, economics, the social sciences and so on. This is said to be a “compilative understanding”, that is to say an evolution being dealt with by operations research.

3) *Intrinsic complexity, otherwise called ill-defined complexity*, in which a general study of the problem is undertaken but the nature of the problem makes it difficult (if not impossible) to grasp and understand the structure or concepts of the system and then its modeling. A difficulty is best illustrated by giving a few examples:

– “What is life?” is an intrinsically complex question.

– In quantum mechanics, the Pauli Exclusion Principle should not be seen as a principle of energy distribution but rather as a computer principle that allows structures and hierarchies to be constituted. It leads to the emergence of characteristic geochemical and biochemical structures, with very specific properties and so on. It is possible to make stable, structured entities, whose spontaneous emergence, or even evolution, is uncontrollable, appear and “form”.

– In a missile or nuclear power plant control system, data processing must be performed in a very short time to correct a trajectory: because of its nonlinear dynamic evolution, real-time computing is required to better control the deviance of the agent and avoid unpredictable or uncontrollable divergences.

It is thus important to prove whether or not a particular problem can be solved using an efficient algorithm. A classification of efficiencies was proposed by A. Cobham and J. Edwards in the 1960s; it was used at IBM’s European Competence Center for Advanced Computing in the 1980s [MAS 98], especially for decision-making problems, that is, problems requiring a fast response time of the type *yes* or *no*. These problems are encountered whenever the process of ranking, sorting, clustering or discriminant selection is required.

Also, in linear programming, a significant step forward was made by improving the processing of sparse matrices through the Karmarkar algorithm [KAR 84] instead of the “simplex” method.

4) *Evolutionary complexity* is derived from the difficulty in reconstructing *a posteriori* the main influences leading to a given state or in explaining why we get a specific behavior. A common phenomenon within evolutionary theory is to find, characterize and explain disruptive

“events” and “catastrophes” that played a decisive role in the incitement, extinction or emergence of new species, the development of new political situations and so on. This is also involved in plant-growing mechanisms. S.J. Gould [GOU 02] classifies this complexity under the category “historical understanding”.

NOTES.— In all these aforementioned examples, we are faced with unstructured and unpredictable situations; no efficient and effective technologies are available to model and study our subject matters. As soon as materialism is unable to quickly perform a good assessment of the required solution, we must guesstimate the results through alternative methods involving technologies lacking a structural base (instinctive, trial and error, feelings, etc.): the only process able to regulate such problem-solving belongs to the realm of individual or collective consciousness: aggregated reasoning and know-how; we are not too far from so-called intuition, anticipation and mysticism, for which no rational approaches exist.

In addition, each time we switch from the quantitative to the qualitative, from the numerical to the cognitive, ethics is required to evaluate and justify the choices related to the adoption of new and unusual opportunities (problem-solving technologies), the evaluation of new processes (that could be more or less appropriate and able to offer tailored solutions to needs or the market) as well as the suitability and validation of advices and results.

#### **10.4. Network theory: complexity, ethics environment**

Ethics in itself is not yet considered as a complex process but it will apply to complex processes. For several reasons, we will remind ourselves of conventional approaches used in our common environment:

- the absolute rules governing all professional activities in the economy are often based on rationality, with a rigorous conformance and respect for the fundamental rights and practices in use;

- equally, non-rational approaches are required (each time human-based decisions are involved, or when individual attitude and behavior must be taken into account);



– when transformational actions and reforms have to be undertaken in our organizations, it is according to these changes that the background and work of employees should be evaluated.

In our environment, in regards to vocational work and programs, if we describe how to incorporate vocational service and ethics we realize that it is not an “easy” approach. Indeed, the structure and modeling of our world has evolved since the rise of the digitization era.

In this chapter, our intent is to detail some underlying principles related to the complexity of operational systems as well as to ethics and then to define how we can handle the implementation of ethics in daily surroundings to improve the global decision-making process. We will take into consideration the implications related to the nano-, micro- and macroeconomic environments in the achievement of a sustainable working system.

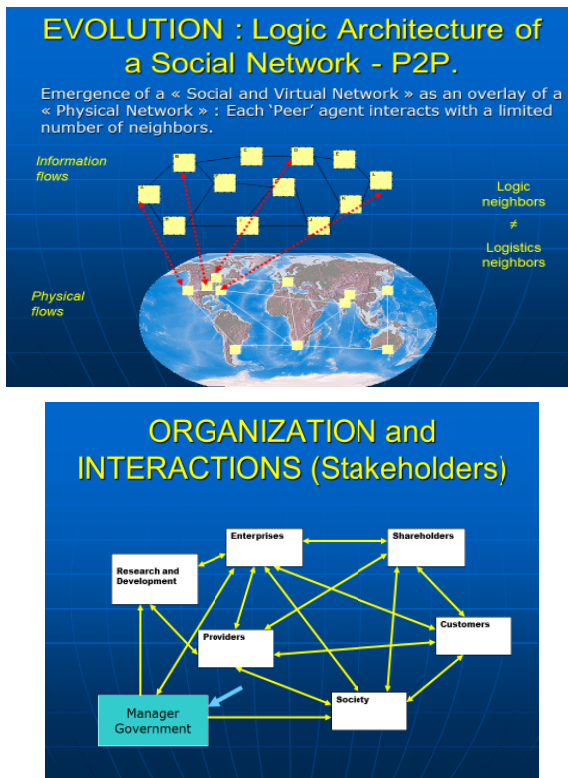
## 10.5. Modeling a complex world

If we look at the evolution of the economic world, two distinct levels of new technologies can be distinguished, namely:

– *Extended logistics*. Physical transition from local enterprises to extended enterprises and then to global enterprises, including the reallocation and distribution of production systems worldwide associated with new logistics systems (optimization, mutualization, etc.).

– *Virtual networks*. Digitalization is now available everywhere around the globe. All the stakeholders of a company, our overextended resources and workforces are stretched worldwide; this has led to many relationships developing through the Internet and across borders, cultures, ways of life, economic systems and so on. A complete virtual world, based on information and logic exchanges, has been created.

Thus, two family of neighbors have emerged (in either a physical or virtual universe) and both are interacting together as part of either an intracommunity or an intercommunity. These neighbors handle both information flows and physical flows of products and services. The structure is as follows (Figure 10.2) [MAS 15b].



**Figure 10.2.** *Interactions fractal organization – a cluster of clusters*

Here, we will not detail the structure of the model and its functioning: we will just remind ourselves, as seen on the above graphs, that interactions are everywhere. More specifically, there are feedback loops and such systems will be subject to nonlinear dynamics.

A lot of information associated with products, goods and services will circulate and interact together between all the stakeholders. As a result, we have shown [MAS 06a, MAS 06b] how different behaviors emerge (in terms of WIP backups or WIP pile-ups, catastrophes, conspiracies, plots, collusions, wastes, etc.) following three scenarios: stable, smooth and continuous evolution; quasi-periodic evolution, and chaotic evolution.

Concerning the last evolution, related to chaos, we recall that it is very common around us in nature. Fractals and chaos are associated with each other. The fractal concepts have origins in mathematics and the theory of chaos: they indicate new ideas to handle with the inflexibility and rigidity of the actual organizations. The fractal manufacturing system is an open system and the main characteristic is the self-similarity between the small components known as fractal entities or fractal units. Whatever the observation, we have the same structure. A fractal unit has the following features and participates in the same way at the upper assembly level:

– *Self-organization*. Reorganization does not need external mediation. Each unit arranges its internal structure on the basis of previously assigned criteria.

– *Self-similarity*. One fractal unit is identical to another fractal unit but the internal structure can be different.

– *Self-optimized*. Each fractal continuously searches for its best performance. Fractals act as independent units to accomplish their own goals (e.g. production of an output).

The basic component as defined above is called (in mathematics and sometimes in this book) an “agent”. Thanks to the evolution of technologies – and sciences – these agents are becoming more and more sophisticated. To be specific, an agent is characterized by capabilities such as autonomy, flexibility and a high degree of self-similarity and is based on the concept of autonomous cooperating multi-agents referred to as fractals. Thus, when modeling a population of autonomous agents, we will consider each agent as a software entity that:

- is autonomous;
- can represent physical resources (e.g. robots);
- can represent logical objects (e.g. schedulers, orders);
- has intelligence to make its own decisions and act in order to achieve its goals (process planning, scheduling, etc.);
- has the capability to interact with other agents (also with humans) and cooperate if it does not possess the knowledge and skills to reach its objectives alone;

- can interact in the environment where it is inserted (e.g. production environment), feeling and changing it on the basis of the knowledge that it contains;
- reacts to context incentives and defines actuation plans on the basis of knowledge;
- can decide if it accepts or rejects a service requested by another agent, on the basis of its knowledge and skills;
- has the capacity to acquire and to memorize new knowledge.

This is the kind of environment in which ethics will be relevant for managing a business, a manufacturing plant, an administrative organization and so on.

### **10.5.1. Ethics, determinism and reductionism**

Everybody is aware of the origin of reductionism. Here, we can quote the principles of causal or scientific determinism as defined by French philosopher Pierre-Simon Laplace [LAP 14]:

“We may regard the present state of the universe as the effect of its past and the cause of its future. An intellect which at a certain moment would know all forces that set nature in motion, and all positions of all items of which nature is composed, if this intellect were also vast enough to submit these data to analysis, it would embrace in a single formula the movements of the greatest bodies of the universe and those of the tiniest atom; for such an intellect nothing would be uncertain and the future just like the past would be present before its eyes”.

This statement aims to get a decomposable system in order to reduce the problem complexity. Indeed, when the number of interactions is high, many feedback loops are present in the system under study: this causes nonlinear amplifications and mitigations everywhere in the networked system and prevents us from doing the right modeling and analysis of the subject system.

In this situation we can see that the Cartesian approach, which consists in “Rightly Conducting One’s Reason and Seeking Truth in the Sciences”, is not applicable. Indeed Cartesian logic can be defined as follows: “Cartesianism requires self-imposed methods, associated with a spirit of analysis based on strictly, logically, rigorously valid arguments. For that purpose, scientists have to imply and exploit all the resources of intelligence, imagination, fair-minded demonstrations, memory, and common sense to intuitively producing nothing but fine proposals that never come to anything” [DES 37].

For this reason, we can state that the systemic approach is in opposition to Cartesian logic: the systemic approach can accept the concept of complexity, even if it deprives us from a total comprehension of system behavior. This also explains why conventional problem-solving methods have often become stretched to their upper limit. Mathematical models based on algorithms, as well as logical reasoning, are difficult to handle and do not easily provide a suitable answer.

To illustrate this notion, let us take a simple example: the e-business. The e-business is, in fact, a “net-enabled activity” based on internal and external relationships in order to create added value. For instance, like a tsunami, it is able to exploit the emerging social needs and market opportunities provided by the new capabilities of the “interconnected society”.

As stated in the previous section, it is difficult to analyze the global evolution of such a system. Conventional deterministic methods, being unable to cover this topic, will require additional and complementary approaches based on so-called empiricism. In this field, we can point to simulation, regenerative approaches or even “case-based reasoning”.

Now, beyond the empiricist-rationalist dichotomy, empiricism has been integrated into the scientific field: according to Robert King Merton [MER 65], empiricism is close to Protestant and Puritan ethics. The development of the Royal Society of London, founded in 1660 by Protestants, is thus based on the combination of rationality and empiricism, mutual respect and partnership and the search for convergence involving different views: these values are best expressed in the framework of a Puritan ethics and form the essence of modern science.

Moreover, in the e-business area, and thanks to social networks, a huge amount of information is now available to anyone; in this scenario, many are tempted to acquire goods whilst some cannot afford to buy them. As a result, the subject of ethics is raised and becomes an issue for the global economy, from which it cannot be accepted that science, which takes e-business as an object of study, does not worry about the fate and the distress of unstable and vulnerable populations living in our society.

Along the same lines, we can consider that the patentability of genes also poses a problem of ethics. Indeed, we do have an ethical concern surrounding that issue, especially as the people who need appropriate or intensive medical care have no financial resources when they are fragile or living in poor countries. This issue requires more attention.

## 10.6. Intrinsic complexity of ethics

Here, we will address the neurobiological and physiological aspects of ethics, in order to show how an ethical activity is depending upon many interactions and how it is so difficult to decide accordingly.

The brain is a very complex organ. It is currently the subject of much attention and a great deal of research work has now been conducted by many neurobiologists. This topic is important because ethics is an expression of brain activity: the way in which we use the notion of ethics depends essentially not only on how the brain is trained and formed but also on how the different parts of the brain interact with each other.

To simplify the writing of this book, we will not describe the cognitive mechanisms and the reasoning or learning techniques involved in ethical processes. Instead, in regards to this context, we will refer to two existing works: *Operationalizing Sustainability* [MAS 15b] and *Smart Decisions in Complex Systems* [MAS 17b].

We can state that the knowledge and cognitive activity associated with ethics are able to express themselves in two different ways. Thus, we are focusing on two main situations.

### 10.6.1. *Reactivity and recognition*

Faced with a given situation, all the encountered facts are memorized and the learning corresponding to their processing is undertaken. In this case, when faced with a given situation, we can implement reflex actions. This is about performing pattern recognition, as done with ANN (Artificial Neural Networks).

EXAMPLE 1.– Let us consider the case where I am assaulted by an animal (a cat or a tiger). At the time, I am accompanied by a young child. In cases of danger, ethics (in the sense of its literal definition) must make me protect the most vulnerable person, even if it means sacrificing myself to save his/her life. When the animal jumps on me, it is important to identify it quickly: if it is a cat, I can scare it; if it is a tiger, I must take the child in my arms and take them to safety as soon as possible.

EXAMPLE 2.– In an enterprise, ethics is positively involved in each multidimensional component of the management. It is related to the management of control of the objectives, decision-making support, the risk and conflict management and so on.

Thus, when faced with a problem of quality, the awareness of each agent or employee of his/her own responsibility and the meaning of his/her actions in the face of a general interest must be immediate, especially if it is a matter of an important decision such as the delivery of a large computer that is urgently needed and so on. Should the delivery be stopped or not? More precisely, when a “beta” risk quality problem (risk of a second species) is concerned, it will sometimes be difficult to decide quickly whether to stop the shipment or not: this requires an ethical approach to choosing between essential and immediate profits and a possible non-satisfaction of the customer, between morality without moralism *vis-à-vis* the providers and subcontractors and the need to deliver a product to ensure its own resilience. If we do not prospectively simulate similar cases before being faced with the reality, we cannot be reactive and propose to our management solutions for alpha-type risks (first species) which represent a risk going against the general interest (unsustainable).

In terms of technologies, we are in the field of pattern recognition, image processing or CBR (Case-Based Reasoning).

### 10.6.2. Reasoning and logic

Faced with a given situation, the facts encountered have not been or are only incompletely stored, and the learning corresponding to their processing is not yet achieved.

In this case, when faced with a new situation, we can implement logic-reasoning processes, deep learning, make comparisons to “match” with similar situations already encountered or practice reasoning by analogy. These approaches are based on the “conscious” capacities of our brain (left side or hemisphere). New skills, cognitive outcomes or experiences are then generated or developed, which can be learned, used or reused.

### 10.6.3. A new capability: mathematical isomorphism

In some specific cases, when particular conditions are present, we can seek in our unconscious the resources and capacities required to improve our present way of life and to condition our future. Indeed, in the right side of our brain we have stored various souvenirs, memories, information and so on. All of them are collected in past experiences, know-how, sensations or perceptions, feelings of emotions, ideas or dreams and so on.

By referring to unconscious information (which is in a relationship with the biological functions of the human body) we can proceed to isomorphic metaphors (which consist in creating a parallel universe from the properties of an object, a problem or a situation and then highlighting a “similar” story, characteristic, structure or set of properties). Thus, we can adopt and memorize new concepts and make a construct or a transposition from an old world to a new one, within the scope of the new context.

For a better understanding, on the practical level it is necessary to describe what we mean by an isomorphic metaphor: this mathematical concept, besides being complicated at first glance, it is a matter of carrying out well-known intellectual operations:

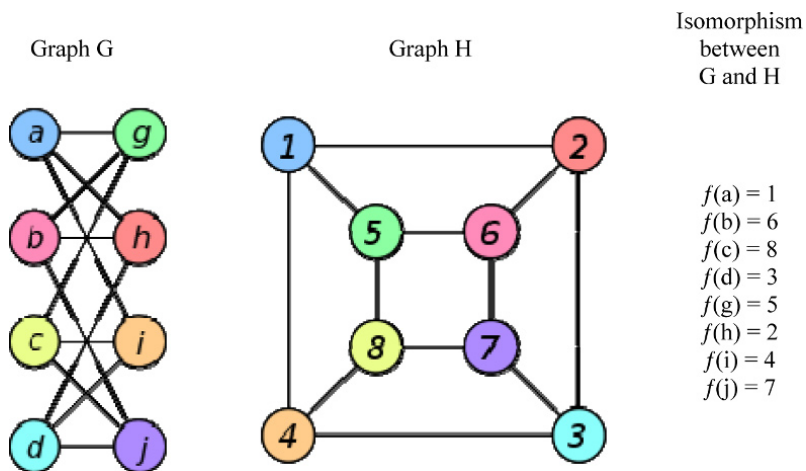
– *Metaphor*. A metaphor comes from the Greek term μεταφορά (*metaphorá*, which literally means “transport”) which is a transformation



(figure of style) based on analogies. It designates an object (or situation) by another that looks like it. The two objects together share the same main quality or property. The metaphor is not a comparison: the comparison highlights a direct similarity (e.g. “The moon resembles a sickle”) while a metaphor suggests a shape or a pattern and appeals to the imagination. When poet Victor Hugo wrote “this golden sickle in the field of the stars”, he suggested that the moon is the subject matter but it is not written. The awareness of context (or semantics) is necessary for understanding a metaphor: it is the context that indicates that right content of a word.

– *Isomorphism*. In mathematics, an isomorphism between two structured sets (or objects) is defined as a bijective application that preserves a common structure. This is reversible: applying an inverse (reciprocal) application or transformation, we still maintain the same structure.

More generally, we say that an isomorphism between two objects is a morphism enabling an “inverse morphism”. To illustrate this concept, we will take an example issued from graph theory.



**Figure 10.3.** Structure of an isomorphism

In the above figure, we have two graphs. On the right side of the figure is a correspondence table: it indicates the different matches between the nodes of the left-side graph with the nodes of the right-side graph.

In fact, in terms of architecture, it is the same graph (it is a hypercube): the shapes are different, the two images are dissimilar, but they both have the same structure (the same intrinsic interactions) at the level of each node. It is an isomorphic metaphor.

When an artist realizes a portrait, a representation of reality, according to his/her particular style (with his/her “paw” or embodied style), he/she makes an isomorphic metaphor: the representation may be different from reality but the main characteristics of the modeled object are preserved. It is an abstract model: its “message”, “character” or information is retained; we can recognize it. This is what Victor Hugo did in the aforementioned example.

This is also done by somebody who has to make a decision in a company: drawing on ethics, he/she makes an isomorphic metaphor. His/her mental scheme allows him/her to make the best decision possible (in this, we are very far from a decision maker who stays fully compliant to his/her mental rigidity and who only apply rules according to predefined procedures). It is thus a matter of so-called controlled mental flexibility. In fact, going back to the definition of ethics, we do or do not undertake an action according to what our personal consciousness dictates to us in the framework of a general interest. We necessarily and mandatorily refer to our consciousness (or our feeling) whenever no formal rule or procedure exists. An external observer, who is used to giving judgments or condemning *a posteriori* whilst comfortably seated in a luxury office, cannot understand that it is necessary to sweep before their door to moralize (this is also an isomorphic metaphor).

This concept is extremely important because it allows, from a knowledge base, or a set of values, ideals and references buried in our own consciousness, to make parallels, transpositions and comparisons with existing patterns, “orders”, contexts, properties and characteristics, specific to given and external situations.

The notion of an isomorphic metaphor makes it possible to understand, adapt, shape (as in a consistent transform, to keep the structure) and transpose our ideals and ethical values into another context (we only change the pattern or the look, i.e. the external form) to confront them with the new situation encountered and allow us to react in the best way possible in an ethical and sustainable framework. It is comparable to a human relationship in which one adapts and gets within reach of the other. We are just embedded into a different environment. It makes it possible to better perceive things in another “world” and to better monitor and control it.

In the field of artificial intelligence, more precisely in the field of “cognitive robotics”, hundreds of thousands, sometimes millions of test cases, are available to carry out so-called deep learning. This learning is done in order to increase the reliability of the system by answering the questions that continuously arise. This is partly what IBM’s “Watson” machine does.

### **10.7. Ethics: structure and complexity of our nervous system**

Temptation is always strong to highlight the biological dimension of our brain in order to explain human behavior, mental expressions, how and why ethics occurs and is expressed or even to justify a social order or moral behavior. Some also speak about “neuroethics” (aimed at reformulating ethics from the brain’s constitution of the human being).

Such an ideology of biological determinism is still alive in some scientific circles, particularly in the United States. We will not enter into these debates but we will partly go over some of them, only to explain how complicated things are and how ethics is a necessary and complex notion: in short, to understand how ignorant we are.

We can say simply that ethics and social behaviors result from cerebral activity. They can bring elements to the understanding of this activity’s complexity because it is not only the brain that decides: there are so many possible situations, functionalities and possible dysfunctions that reveal that it is currently impossible to resolve in a deterministic way the ethical questions we may have.

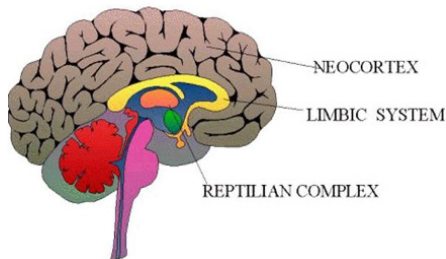
### 10.7.1. The brain: the central nervous system

Here we shall limit ourselves to only a few brief observations on this subject. The brain, which is essential to human life, comprises three areas:

– the reptilian brain: directly connected to the sensory system, it allows us to measure, analyze and control a large number of motor functions of the human body. Basically, it ensures the survival of the species and it is here that we find reflex actions to manage basic functions, such as displacements in relation to fear, escape, aggression and so on;

– the limbic brain: center of emotions, it allows us to manage notions of feeling. Learning and memorizing are also managed from this area as well as our gregarious instincts;

– the frontal neocortex: particularly dedicated to cognitive analysis functions and reasoning (thinking, interpreting, etc.), it is in this area that the functions enabling progress in the sense of intelligence, imagination, creativity and so on are located.



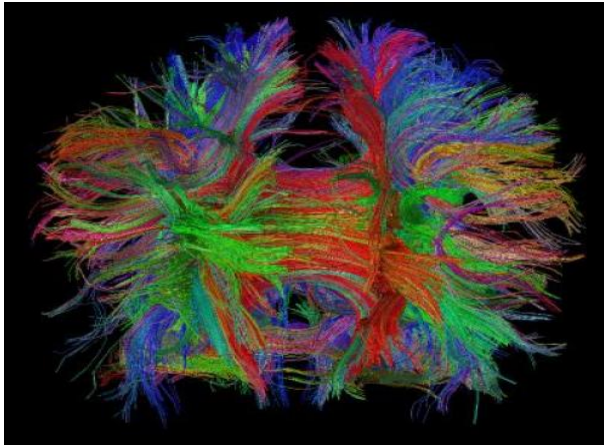
**Figure 10.4.** *Simplified organization of the human brain*  
(<https://energeticsinstitute-com.au/trinne-brain-evolvtionary-design>)

What is remarkable is that nothing happens in a sequential way. These three brains, of course, communicate with each other. This functional partitioning, elaborated by human evolution, is not intended to show that there are barriers between these areas. On the contrary, the two hemispheres of our brain communicate together and even all the areas of our brain are interconnected. Thus, the sensory centers are in direct relationship with the

frontal neocortex parts. It is a holonic system endowed with a great parallelism.

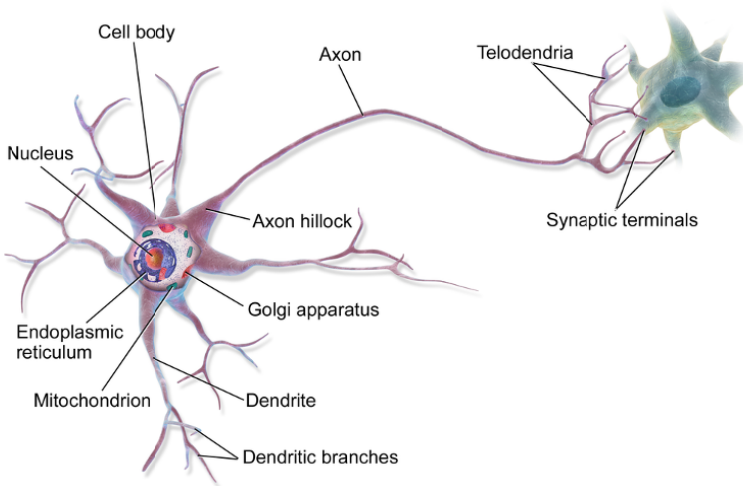
The following image is an illustration from the Newcastle University Press office: it was obtained by DTI (Diffusion Tensor Imaging) and represents the various nerve connections we have in the brain. As can be seen, each part of the brain is interconnected with others: it is a complex and strongly connected system. Our understanding of the cognitive system, as described in much common work and thought, is now outdated because the mechanisms of thought and behavior are far more complex than a simple automatism: they are those of a complex vortex.

As far as ethics is concerned, it is an emerging property that involves not only the frontal cortex or the limbic brain but certainly also many other regions of our brain, as it relies on many interactions that we are still far from identifying and understanding.



**Figure 10.5.** *View of the various intra-brain interactions. (AP/SIPA) (source: <http://cercor.oxfordjournals.org/content/early/2013/12/13/cercor.bht333.full>)*

In the above figure, the different colors indicate the local directions of information flows (of the nerve fibers). The colors are blue = top-down; green = from front to back; and red = from left to right.



**Figure 10.6.** *Anatomy of a multipolar neuron* (source: <https://commons.wikimedia.org/wiki/User:BruceBlaus>)

Moreover, the brain, as we can see, is a dynamic organ: it comprises hundreds of billions neuron cells interconnected through the synaptic terminals of dendrites and axons. These interconnections and associated weights evolve throughout our life. We just modify the way they work by successive learnings and physical reconfigurations. Therefore, each zone of the brain evolves, increases its capacities and adapts to new contexts:

- new knowledge and experiences are stored within the interconnections; therefore, we can model and register souvenirs or memories, creating new concepts and new ways of seeing, perceiving and “feeling” the world;

- the different and various perceptions are interconnected and interpreted in a global way. We are able to aggregate concepts, knowledge, emotions, experiences and know-how and integrate new knowledge and feelings;

- our brain uses all kinds of memory, including visual memory, auditory memory, movement, gestures, sensations and so on, and makes them work together simultaneously to create a stronger, more elaborate, smarter and better-adapted network;

– the brain receives some information as input then creates and generates new information: this is how any living organism works. The problem now, with the “cellular automata-oriented approach”, is that there is no information creation: there is no dynamic self-reconfiguration, there is no feedback between the person (as a whole) and the process and so on.

#### 10.7.1.1. *Applications*

We can quote an example that sometimes challenges the ways of learning as we currently imagine and develop them. For instance, in order to learn and organize a manual operation (a gesture), it is usual to proceed with an approach using mimicry: an expert performs the gesture in front of the pupil and the pupil reproduces it while memorizing it. This is commonly done according to the nature of the living being, for instance reproducing a macro-function, learning an elaborated behavior, gaining skills and so on.

In a company, the approach remains the same and is often done in this way. Here, the young recruit is assigned to workshops for a limited period of time: he/she observes what is going on, follows a practical training course, learns and acquires a corporate culture and so on. However, the perception and training of each individual is not universal (in the sense of universality) because we are all unique in our abilities, character, physical strength, tastes and the welcome that is reserved for us. Immersion in an unusual environment can be considered as an experience associated with stress: learning (like debugging) is not an exact science because brains are different from each other; people react differently depending on the state of our sensory, emotional and cognitive sensors, culture, psychisms, abilities to communicate and so on.

Thus, our way of thinking, reacting and behaving is the result of different external influences. Human beings develop in symbiosis with their environment, friends and the associations to which they belong. Our flourishing is directly influenced by our knowledge, know-how, culture or religion. Human behavior and ethics are the result of not only internal but also external influences: it is not only a simple physicochemical operation but also a much more complex, subjective operation controlled by the psyche, the environment [MAS 15b] and many other factors.

### **10.7.2. Abdominal brain: the enteric nervous system**

Human beings not only possess a unique main brain, their activity is also based on a so-called “second brain” which is as important as the “main brain”.

On the other hand, from its origins the human being can be considered as a primate–bacteria hybrid, consisting of more than 90% microbes (bacteria, 100,000 billion) and only 10% human cells. Our body is mainly a reservoir of bacteria. The composition of our intestinal microbiota, which is initially present in our organism, has influences on all the components of our body: not only our immune system, our endocrine and hormonal system and thus our health, but also our central nervous system (the brain) and what follows, namely our appetites, behaviors, desires, intents, feelings and so on.

#### **10.7.2.1. The operating process**

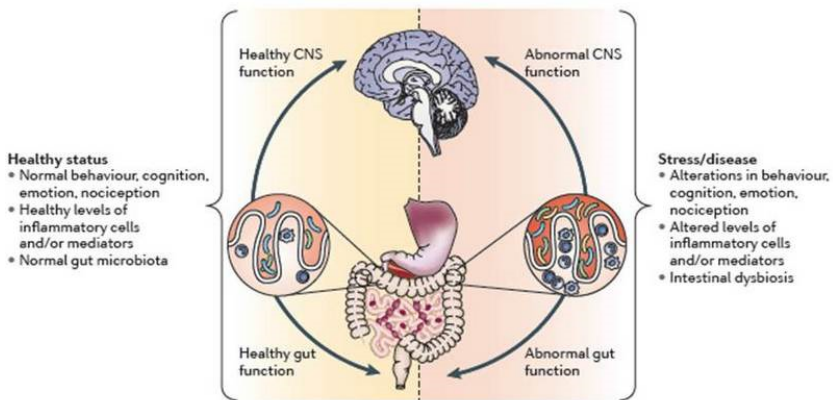
On the structural level, it is important to note that the enteric nervous system (ENS) is part of the autonomic nervous system (ANS) that controls the digestive system, both for motor activity (peristalsis, vomiting, etc.) and for various secretions and vascularizations.

On the chronological level, the enteric brain is developed from the central brain (CNS). Consisting of about 200 million neurons distributed along the walls of the digestive system, it is a much smaller organ compared with the 100 billion neurons of the CNS (mainly grouped together in the cranial cavity). Both, however, have similar structures and underlying mechanisms. On the embryonic level, the nerve cells of the abdominal brain have the same origin as those of the main brain).

Recently it was discovered that intestinal bacteria secrete molecules (proteins, hormones, enzymes, metabolites etc.) with a specific action, such as serotonin, which are able to migrate to the brain (CNS): thus, our intestinal microbes make it possible to modify and structure our brains. They directly or indirectly influence our mood, behaviors and feelings.



Indeed, by studying the interactions between our intestinal microbiota and the central nervous system simultaneously, new neurochemical substances that had never been described previously were discovered: these neurochemical components, produced by intestinal bacteria and microbes in the ENS (Enteric nervous system), can have various properties and generate actions after migration in the areas of our CNS. For example, they may have psychotropic effects or modify the perception of a sensory signal, changing its analysis, the amplitude of the perception, interpretation and so on.



**Figure 10.7.** Simplified model of the enteric brain [CRY 12]

### 10.7.2.2. Application

A decision maker may be expected to have more or less abilities to assess a situation depending on the health status of his/her intestines, the excesses of swallowed food, the abuse of beverages or drinks and so on. Everyone knows that stress or fear has the property of “tying” the stomach. In the same way, happiness is proven to amplify incontinence. These examples are just mentioned to explain the relationships existing between the brain and the digestive system.

In a reversible manner, the enteric nervous system maintains close relationships with the immune system [KUC 01]. The digestive system represents a subject matter to be explored with regard to neuro-immunology. This is a recent and fascinating area of biomedical research, particularly for degenerative or other diseases. Indeed, it would be easier to diagnose such diseases by analyzing the ENS (e.g. Parkinson’s disease): it is regularly

assumed that a lot of nervous or mental diseases and disturbances may occur simultaneously in the CNS and/or the ENS with well-identified symptoms.

There is another characteristic that has an even more promising similarity for medicine: if we compare the cells of the enteric nervous system and those of the central nervous system we see that ENS neurons produce the same molecules (e.g. neurotransmitters) as the main brain and could participate in the care of some defects. Moreover, everyone knows that if our digestive system is disturbed, the decision-making that ensues is bounded by imperfections. Similarly, when a person is hungry, he/she becomes impatient and his/her sense of “listening” (and therefore empathy) and of ethics decrease and influence the quality of the decision.

### 10.8. Application: ethics and synesthesia, a virtual phenomenon?

There is an important issue concerning Ethics that we would like to analyze from a different perspective: is it a virtual phenomenon?

We are beginning to think that the brain is the central element of thought and behavior but not that ethics is: ethics would be the result of a synesthetic process.

The definition of synesthesia describes it is a neurological phenomenon in which the stimulation of one sensory or cognitive pathway automatically leads to an involuntary perception and appreciation of an event or a situation (after learning) in a different sensory or cognitive pathway.

To explain how several meanings are associated with emotions and knowledge, we will use the following image (Figure 10.8).



**Figure 10.8.** Synesthesia. How to associate a color to letters and numbers (source: User:Mysid – Self-made in Inkscape based on en:Image:Synestheticwiki3.png)

Ethics is a type of “cognitive-sensory” synesthesia. In this type of synesthesia, and because of the mechanisms of memorization, learning and so on, the cognitive perceptions of past lived experiences will be interpreted as souvenirs and facts associated with colors (or artistic or psychic expressions), patterns (faces, dangers), noises (disturbing or calming music) or even epidermal sensations (e.g. stroking) and therefore any sensorial sensors.

In other types of synesthesia, the effects of our perception will be felt and associated with other external events that will condition us (pleasant or emotional scenes), with a kind of personality or image in a space-time universe. Again, in another type of synesthesia, called “synesthesia of ordinal/linguistic personification”, these elements can evoke personalities, identities or given styles.

As a consequence, there are different kinds of synesthesia [STR 09], and many people are able to perform such associations or interactions to memorize events, better express and explain phenomena or establish “cause-effect” relationships between two sensations, impressions or feelings.

The general confusion consists of considering synesthesia as a disturbed perception of sensations. When we have to decide on a professional action, we can be compelled, through ethics, to associate several different meanings and thus interpretations or possibilities of decision from a single stimulus: this does not mean that we are sick, complex or endowed with empathy, but that one has additional extraverted faculties. For example, in the case of an interview or a meeting, a person can associate a given behavior with a specific meaning, depending on the attitude of a partner, a grimace or a given gesture: it is an influence that will have an impact on our judgment and sense of ethics. Also, in other cases, it may arouse in us creative ideas in pictorial terms, able to generate a dream or the dreamed image of a situation to which we will refer!

In the marketing field, synesthesia (of the grapheme-color type) is also used: it is common for brands to associate letters or logos with specific colors to assert an identity and signify a message or strategy. Just observe what surrounds us, for example Gaumont, IBM, Carrefour, Muchachas and McDonalds.

Similarly, just as green is the world of feeling and affect (or even sustainability), red indicates the world of effort, concretion and autonomy.

Blue is the world of communication and intuition, listening, empathy and so on. Innovation and unity are also based on white and blue.

## **10.9. A review of common characteristics of complex systems [GEN 11, FUT 17]**

Complex systems can be found in many different places, for example, in nature, traffic, our brains, the economy and society. As Ethics is associated with complexity (because of the numerous interactions (feedback loops, SIC, etc.)), we have to list some properties that will characterize ethics.

Complexity science deals with the common characteristics of complex systems as well as trying to understand the differences between complex systems in different fields. Here, we will remind ourselves of the most important common characteristics of complex systems as specified by Dominique Genelot [GEN 11], with extracts from [FUT 17] forming the basis of the following sections.

### **10.9.1. Emergence**

*“Complex systems show emergent behavior. Out of the interactions between the individual elements in the systems, behavior emerges at the level of the system as a whole. This so-called higher-order behavior cannot simply be derived by aggregating behavior at the level of the elements. The whole is more than the sum of its parts. This higher order was not intended by the elements. It is a spontaneous order”.*

### **10.9.2. Sudden transitions/tipping-points/nonlinearity**

*“Complex systems show nonlinear dynamics. This means that they may suddenly change behavior or move to another regime. They may move from a high degree of stability to very unstable behavior. Let us take revolutions and financial crises for example. A very moving description and literary account of the rather sudden cultural breakdown in Austro-Hungarian society at the beginning of the 20th Century can be found in the book “The World of Yesterday” written by Stefan Zweig, finalized just before he committed suicide in 1942”.*

### **10.9.3. Limited predictability**

*“The behavior of complex systems cannot be predicted well. Small changes in initial conditions or history can lead to very different dynamics over time. The existence of nonlinear behavior also adds to unpredictability”.*

### **10.9.4. Large events**

*“Relatively small changes may lead to large effects. This is the case if a complex system is close to a tipping point and it is therefore related to the nonlinearity of complex systems. These are the result of the inter-connectivity of complex systems. Pressure may build up over time and then erupt suddenly and forcefully. Large events do happen more frequently than expected on the basis of the normal distribution of events. Events that are almost impossible according to the normal distribution have a low probability in a complex system. They are not impossible. They are the so-called “Black Swans”. They follow the so-called power-law or log linear distribution”.*

### **10.9.5. Evolutionary dynamics**

*“Complex adaptive systems are often shaped by evolutionary dynamics. The mechanism of evolution starts with variation. Then, there is selection of elements that are fit for the changed conditions. These elements flourish and multiply in the system. They may also change the external environment of the system, causing new variation. New variation may also come from outside the system. A new cycle of variation-selection-multiplication-variation starts. The system is never at rest. There is no movement to a knowable “end point” or equilibrium. There is constant change and innovation”.*

### **10.9.6. Self-organization**

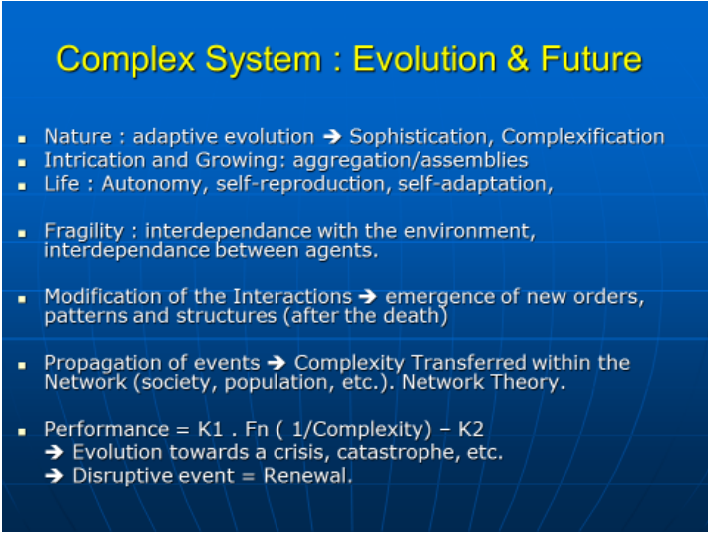
*“Complex adaptive systems operate without central control. However, they are often characterized by a certain order. They, as it were, organize themselves from the bottom-up”.*

### 10.9.7. *Fundamental uncertainty*

Complex adaptive systems are extremely hard to predict, neither in great detail nor over the mid-term, because of the nonlinearities existing between the agents, the emergence of unexpected events and the divergence in the evolution of the events. This means the future is fundamentally uncertain and unpredictable.

Moreover, as seen before, there are strong one-to-one relationships between uncertainty, risk and complexity. Consequently, the next generation of management systems will have to include this constraint. This also has an impact on Business Ethics, as we have to be responsive, holistic and imprinted of justice in balanced choices.

Any complex system, however, is never a stationary system. It evolves over time according to the following chart. Indeed, Nature always launches strategies and policy-based inherent dialogics to secure its sustainability. To go further, we can refer to [MAS 15a]. In the evolution mechanisms considered in this book, the dialogical approach is based on so-called ambivalences, which are handled in such a way that we can reach some equilibria. These are the underlying principles existing in nature, to better adapt and complexify or simplexify the system under consideration.



**Complex System : Evolution & Future**

- Nature : adaptive evolution → Sophistication, Complexification
- Intrication and Growing: aggregation/assemblies
- Life : Autonomy, self-reproduction, self-adaptation,
  
- Fragility : interdependance with the environment, interdependance between agents.
  
- Modification of the Interactions → emergence of new orders, patterns and structures (after the death)
  
- Propagation of events → Complexity Transferred within the Network (society, population, etc.). Network Theory.
  
- Performance =  $K1 \cdot Fn ( 1/Complexity) - K2$   
 → Evolution towards a crisis, catastrophe, etc.  
 → Disruptive event = Renewal.

**Figure 10.9.** *Evolution: death and renewal of a complex system*

## **10.10. How to implement ethics in complex systems**

The engineer is not only an actor in this global ecosystem but also a manager and the designer of a product/service. His/her ethical responsibility is involved: the engineer can no longer continue with producing objects that are technically possible and legally authorized; he/she must also implement in his/her thinking an ethical questioning about the finality, intents and consequences of the technical advances he/she is working on. If he/she does not, who will?

### ***10.10.1. In complexity, the strategy is mainly related to the ethics of responsibility***

This short and schematic presentation of a “modeling process” shows how far the challenge of complexity is first of all in our heads. It is not reality “in itself” that is complex but our relationship to reality. The main idea is a constructivist one. It can be summarized as follows:

– Our representations, models and knowledge are not always an objective and accurate image of reality. They are constructs of our mind and therefore subjective, contextual, projective and evolutive.

– If we accept this point of view, we can see the boundaries of our ethical responsibility. We must be aware of and think about how our mental models are emerging, what are the abilities of our consciousness and what other people have in mind.

Everyone has his/her own perspective on things and situations. If each of us has such a representation in mind, this is because he/she is convinced that it is the right or the best one. Hence, it is illusory to seek to convince the other about the “truth” of our point of view. Rather than throw our own certainties at the head of our respective partners, would it not be better to trace back to the origin of these points of view and then to question ourselves on the generation of our opinions? On the level of an individual, this is a kind of “ecology of the mind”. It is relevant to ethics, as it is a questioning of our contexts and our deep BDI (beliefs, desires and intentions).

On the collective level, it is considered as an “ethics of deliberation” relevant to the development of “collective intelligence” in order to build a path together.

### **10.10.2. *Where is our responsibility in a highly intricate information network?***

Our organizational processes are in perpetual change. In such conditions, human beings are used to calling for ethical guidelines that are “reliance” and “resilience” oriented. It is a question of complex system sustainability.

The spirit of reliance is an ethical attitude [MOR 04], which recognizes that our survival and even our identity are possible only because we are “interconnected”: with our family, community and society. Our reliances are diversified, as they are dependent on multiple criteria: language, country of origin, nationality, religion, regional culture and so on.

### **10.10.3. *System analysis***

System analysis requires a lot of effort in regards to the rigor and abstraction needed to conduct the modeling processes in a conscious, responsible and in the least reductionist way, to preserve the main structure and enough diversity of the reality. We can quote the fundamental work of Jean-Louis Le Moigne in this area. It is a radical paradigm shift that requires not only discipline and pertinent mental tools but also a true intellectual and business ethics.

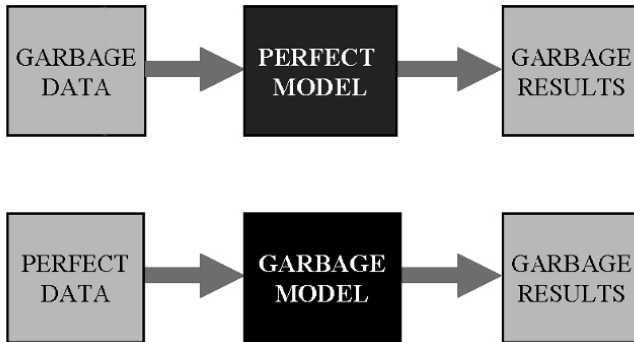
### **10.10.4. *Elements of methodology***

When modeling and analyzing a complex system, we have to carefully follow some rules of ethics in order not to design, develop and use either a “good” or a “wrong” system. It is not just a question of ignorance but of honesty, as everybody knows, “garbage in, garbage out”.



## MODEL CALCULATIONS

### “Garbage In-Garbage Out” Paradigm



**Figure 10.10.** *The Garbage In Garbage Out model paradigm*  
[http://3.bp.blogspot.com/-iINAZA0i-ps/UwaTF0o3-KI/AAAAAAAAAbY/dKBoDi02G4I/s1600/garbage\\_paradigm.gif](http://3.bp.blogspot.com/-iINAZA0i-ps/UwaTF0o3-KI/AAAAAAAAAbY/dKBoDi02G4I/s1600/garbage_paradigm.gif)

In order to properly design, analyze and handle a complex system, regardless of the activity sector considered, Ethics will be used as an enabler for challenging the following five issues and concerns:

1) The intention: this first field of questioning is probably the one that is subject to the greatest ethical risks. Indeed, it is quite easy to interpret and modify our intents and even to lie to ourselves. What are the purposes, the reasons for being and objectives of what we are trying to model? What are the conditions of the mental construction? What are my deep intentions? What are the fixed ideas, the certainties and the paradigms, which distort the meaning of our thinking? This questioning is continuous and constantly renewed. This is necessary because our environment is changing and evolving and our intellectual integrity requires us to stay sharp and remain vigilant.

2) The context: as every system is connected to another one, the whole of human action is related to other actions, other people and the environment. The idea of this second stage of questioning is to explain this network of reliance: who is involved by these aims? Who are the stakeholders? What are the impacts of our intentions and projects on stakeholders? What are the links with the environment? What is the border of the system? What do we change in the ecosystem?

Things are only meaningful if they are situated in a context (situated intelligence) and in their interactions with the elements of this context (human persons and groups, animal species, natural and animal environment, social, cultural, organizational, technical, economic, etc.). This often leads one to reconsider the aims of a project. A recursive process can be established between the ends and the context, during the design of the system or the decision-making stage.

According to complexity theory, it is a classic trap to try to make an “exhaustive” inventory of the components of the context. This fantasy of completeness is in logical contradiction with the idea of complexity, which considers, on the contrary, that we can never pretend to know the whole reality: the complexity is in the interactions and not in the elements (or nodes of the network).

On the contrary, ethical rigor consists in having the modesty to always challenge the context in order to evaluate its evolutions or simply to highlight our blindness. For instance, for the captain of a cruise liner (e.g. the Titanic or, more recently, the Concordia), it is of key importance to take into account the presence of rocks or icebergs and the possibility of unknown but plausible defects of the ship (the term “possible” is just for statistical purposes). It is true that this can disturb some (declared, avowable?) local and temporary goals but it is preferable with regard to the priority objective, which is “passenger safety”.

3) Action development: What are the activities to be carried out and the functions to be fulfilled in order to organize the action in line with the aims? Quite often, the question that arises spontaneously when describing a system is: “what does it do?” without asking “what is it for?” and “what are its purposes and objectives?”.

Beginning by questioning (and questioning oneself) about the aims of the systems that are conceived is a matter of mental hygiene and ethics and helps to avoid the worst disasters. Emergencies, stress, strong social pressure and submission to authority are open doors to this risk.

This is why a systematic questioning, such as that proposed by systemic modeling, is important and justified at either the epistemological or ethical level.

4) Self-regulation and self-control: complex systems have self-organization capabilities. They can evolve and adapt by themselves. This is why the responsibility of the designer is always active in maintaining and improving its evolution along the PLM (Product Life Cycle Management). He must take care of new regulations, interactions and “self-control” features that are necessary for these functions to work together up to the ends of a mission. It is a question of reliability.

In social systems, this also raises the question of governance and maintenance. They are very efficient at their origin but they lose, over time, some efficiency (lack of adjustments and updating); their use is subject to deviances (lack of vigilant governance) and they have to take into account the evolution of needs and context.

An example is the economic crisis triggered in 2007 by the subprimes. There were a cumulative effect of deviances (greed) and a lack of global governance (lack of skills) which lead to facilitating trade through an easy and fast circulation of money, draining savings, investing and accelerating development.

In the absence of regulatory vigilance and self-control capabilities, this complex financial system has opened up worldwide speculation and greed activities. Introduction of new digital technologies was not aimed at changing the way of working but only used, as an automata, to develop fast or high-frequency trading. Such practices, only SIC-oriented, are just accelerating the deviances of a system or the occurrence of a paradigm change and can be considered as destructive of any confidence: this is not ethics at all.

5) Evolution: the last point of the questioning, unfortunately regularly forgotten in the sustainable design of systems: what to do to maintain the resiliency of the relevant system over time, taking into account the evolution of context and purposes?

This question is in line with that of governance as considered by philosopher Edgar Morin: a system which does not concern itself with its “self-eco-reorganization” is subject to degradation or deviance and will diverge from its initial purposes.

### **10.11. Conclusion: interactions, ethics and mimicry**

In this chapter, we have seen how (and how much) complex systems are needed for ethics to overcome the lack of control: in this case, ethics acts as a regulator and behaves not as a rigid process for decision-making but as an alternative to the usual control systems, whose capacity is limited due to the presence of a deterministic chaos or which are inoperative because they are not adapted to the changing conditions of the environment.

Second, apart from the complexity inherent in the system studied, the couple “ethics-system studied” also forms a complex set (at the intra-level). This is consistent with what was developed in this chapter. Everything, at each level of aggregation in nature, operates according to the same principles. If we call “agent” in an object, a person or an element with which we are interacting then there are mutual influence phenomena, more or less strong with all the agents that surround us. In addition, diversity being a properly of Nature, there can be no single, universal (and therefore coherent) view of ethics.

The third point is that taking a decision requires many interacting objects. This complete set constitutes a complex system (at the “inter” level). Any solution called “simple” is a lure. In a conventional way, we say that the current approaches are reductionist and do not reflect the reality: decision-making, integrating the notion of ethics, is a global process, mixing qualitative and quantitative aspects and mixing emotional, psychic and logical reasoning.

Each decision-making process including feedback loops is subject to nonlinear dynamic phenomena: an infinitesimal modification of a parameter (SIC) as well as an infinitesimal influence on the part of an external factor will generate a divergence, that is to say, a change of attractor [MAS 89]. Therefore, it is appropriate to have a holistic approach in order to integrate, in a consistent way, all the factors into interactions and to place oneself in a multidimensional universe.

Thus, the result of a decision can only be obtained through a modeling of the holistic type, associated with the search for an optimal equilibrium in the sense of thermodynamics, that is to say with techniques of a regenerative type and with the theory of games. In this context, nothing can be predefined and everything is unpredictable: this will lead us to a lot of prudence and modesty because a decision considered good or ethical by some observers could be considered as “risky” or inappropriate by others.

We see that the decision-making process associated with ethics is not only physiological, physical and subjective but also very diversified, as it depends on many factors: on our internal or external environments, on analysis areas of the brain or even our digestive system. According to Complexity Theory, it will be said that ethics requires a systemic approach, responds to global, universal mechanisms and principles and applies holistically to all the areas around us.

Finally, although this subject has not been covered in this chapter, the analysis of complexity has to be completed by talking occasionally about the topic of non-decidability. American researchers [ROG 15] have shown that a person tends to orient him/herself toward the trends of his/her surroundings but avoids copying others' actions.

Thus, during a meeting or in our professional relationships, our perceptions, behaviors and reactions will tend to be correlated with those of the person(s) who are accompanying us and with whom we exchange opinions (in 50% of the cases). Conversely, if we have to make a selection or a decisional choice, it is only similar in 25% of the cases.

This is because we are living in a multicriterion world: in a group or cluster of people we can agree to base our decision-making on several criteria but diverge at the level of the final choice or even be unable to choose (e.g. Black Social Ranking [BLA 48, BLA 58, BRU 98]). To overcome these difficulties, data analysis techniques based on the Condorcet preferences method can be used. This approach was used by IBM within the Advanced Technologies Group [MAS 15b] to analyze interactive decision systems and to extract the best possible solution.

During our working meetings, or in the course of our discussions or information exchanges, it will be noted that agreement is generally strong: the external agents to which we are connected often express opinions or advice about cognitive preferences, sensorial perceptions and “beliefs”. Conversely, as soon as these correspondences address a selection or a choice, its effects are reduced because other subjective decision criteria are involved (they are now based on “intents” or “desire”, etc.) [MAS 15a].

This shows that in the area of ethics or decision-making we can influence people by telling them about our tastes, practices or culture (it is always easy to understand ideas and adopt cognitive concepts), while they might not be convinced to share our choices or conclusions: the decision-making process always fulfills and responds to a strategy of survival and reproduction of the species. Within this context, we need to maintain a certain independence (and plausibly selfishness) and hence to stand back in order to better manage risks. Therefore, even if ethics requires empathy, listening and respect for others, it will sometimes be necessary to take some authority to impose specific conditions or an elaborate decision within the public interest.

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## Dynamic Evolution of Life, Management and Ethics

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### 11.1. From complexity to life: general considerations

This chapter is an extension, within the ethics subject matter, of Chapter 6 of *Sustainability Calling* [MAS 15a].

In nature, all the organisms and organizations are evolving toward a greater complexity. This evolution is like a multilayer assembly, following fractal principles. As a consequence, this complexity requires new management and control systems, regardless of their type: material, biological, organizational, social, economic and so on; this is reflected by the emergence of innovative proposals, a tendency to seek improvements or enhancements and, at best, the optimization of a function.

Within this philosophy, “the function is not the organ but the organ makes it”; in other words, the eye is not meant to see, but the function of the eye is to see. Then, we have to adapt and evolve by considering such properties and behaviors.

In the same way, life is a function associated with properties, relevant to a super-assembly. Beyond life, which is our present concern, there will be something else, still more evolved, as we will see later. When talking about life, death cannot be an end; death is not an injustice but something useful to achieve the next step of an evolution.

To return to this point, everything in nature is not always optimized (as is done, for instance, in Operations Research, in industrial management systems). Instead, nature is about trying to find compromises and to “do the best”. By compromises, we mean equilibria reached through either self-organization principles or more directed approaches such as game theory or thermodynamic approaches. This can be easily understood if we analyze some biological facts as follows:

– It is said that *altruistic behaviors* promote the survival of whole species (as does the selfishness in some specific cases to enable the strongest individuals to survive). Similarly, in our organizations and industrial companies, we learn that selfish individuals may thrive at the expense of altruistic individuals in a team based on cooperation and collective working (we are strongest together and we produce less negative decisions). However, making the group the “fittest” one, temporarily, in terms of efficiency and effectiveness, can in turn make it less competitive overall: on a medium- and long-term range, such cheaters can have disastrous consequences when faced to hostile uncertainties.

– The *death of a living being* or living organism arises when it consumes too much energy for some given functions provided within a given context: it must give way to youth. It is the same in a company when individuals are incited to retire because a young employee is working harder with a reduced salary. This is against the general interest of a society. This is also a big problem because eusociality cannot apply. Eusociality is a sophisticated social mode, where: (i) aged people can help young ones, (ii) the continuous overlap of two generations of individuals can exchange informational assets and help together in fastidious tasks and (iii) polyethism, with quite diverse skills and fertile individuals, reduces the bias during the production/reproduction processes.

– *Sexual reproduction* allows us to introduce more diversity within a species, but not necessarily in the desired direction initially. Indeed, there are several ways in which evolution can reduce the overall fitness of individuals or of the population. For instance, natural selection can take place everywhere at genes, individuals and groups – at the economic level. What promotes the survival of a gene or the funds given to financial banks (when involved in a subprime crisis) does not necessarily increase the fitness of the individuals carrying it or of the society of these individuals submitted to this unexpected event. In the same way, there parasitic DNA elements, or transposons, are able to be spread through a population even though they



make their host organisms less fit. Transposons are one cause of genetic diseases such as hemophilia and may cause the disappearance of an individual/species. Genes capable of driving populations to extinction might have a practical use, however. Biologists are exploring the possibility of releasing engineered parasitic DNA into populations of malaria-carrying mosquitoes. It is the same in the Information Systems where viruses are introduced by specialists in order to “condition” the Web and associated computing systems toward a given goal.

– In case of loss of *the habitat or food reduction*, some species are able to modify their reproduction rates and limit the number of individuals to save the species. In 1932, J.B.S. Haldane suggested that this could even lead to the extinction of populations: it is a kind of evolutionary suicide, for instance, when nutrients run low, individual myxobacteria (slime bacteria) may come together to form a fruiting body to produce spores. Laboratory studies showed that cheating myxobacteria that only produce spores and never help form the non-spore producing parts of the fruiting body can drive populations to extinction.

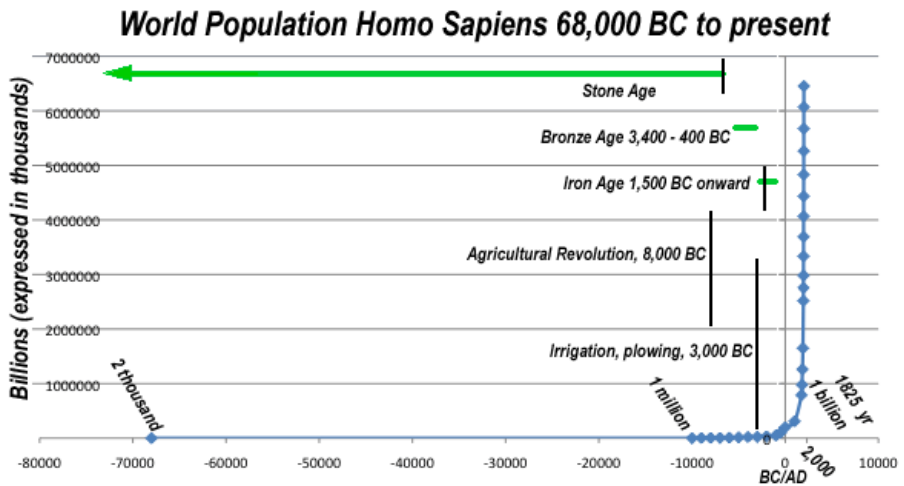


Figure 11.1. Evolution of the human species over geological time

In each case, a need coming from the so-called “higher order” is sought and oriented toward the survival of the species. Thanks to this sustainability concept, the characteristic of “life” is to select improved (or better adapted)

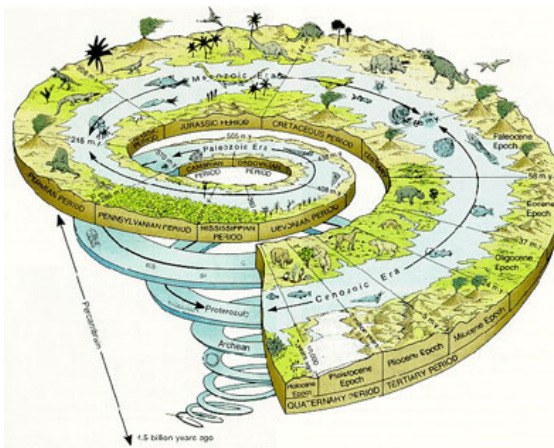
solutions and thus for species to evolve toward innovative patterns and viable strategies.

If our intent is to spend time on this subject, this is because “life” (or evolution of the humankind) is going faster and faster toward a paradigm change. Thus, the question of ethics is of key importance because we do not know where we are going!

This a real problem of global ethics, because according to that evolution curve, the human being is modifying the world in such a way that he will be soon faced with a limitation (limitation in his complexity, limitation of energy or food, limitation of his control of the world? Natures intent to change its own generated avatar by another one?).

Within this framework: is survival an ethical concept?

COMMENT.– Figure 11.1 is an illustration of what can happen with human evolution. Looking at the geological time line explains how Earth and living evolved over time. This is shown below (Figure 11.2).



**Figure 11.2.** Geological spiral evolution (source: <http://www.kidsgeo.com/geology-for-kids/0030-geologic-time.php>)

As we can see, changes in the Earth's landscape are continuous, and have been for several hundred million years. They are very slowly perceived by human beings. It can take many generations before any noticeable change takes place in the landscapes of a particular location.

We are living in the Anthropocene era, but, since nature is constantly changing and evolving, what we see today will be very different in the future. The mountains, rivers, lakes and land formations of today will disappear and be replaced in the future.

The global environment is evolving, and follows the "trace" of our evolution: each time we are faced with disruptive conditions, or a paradigm change, we recalibrate and restart. The evolution of each species is very different at any given time.

Do we have to talk in terms of improvement or survival of species? A species is the product (sink, or result) of a specific biological evolution and not its source or the origin of a mutation. Moreover, the goal being sought and carried on, in a complex system, is not the element (or agent) that directs the adaptation of a structure, organization or behavior. It is only a resulting feature or behavioral function or characteristic, as any order emerges from self-organization. The order that emerges will be the best-fit solution according to a new context or random events that occurred.

## **11.2. Life survival: introduction and model transposition**

In administration and industry, we often talk about life and the resilience of a system. Quite often, there are short-term objectives. It is a major concern: very often politicians believe they will solve a problem by giving money or implementing social advantages with the hope they will allow for the recovery, and then the survival, of a system. Is this ethical? Probably yes, if we take into consideration short-term fears and BDI. The answer is "no", if we consider the global sustainability and the future evolution of the system.

In practice, we always try to understand how we could benefit from experience to enhance our management and control systems. In serious situations, executives or managers take into consideration so-called “system complexity” but their way of thinking is not “complex” at all, and a paradigm change is still required and expected in the way we have to define and design the governance, management and control of such systems.



**Figure 11.3.** *Evolution of life* (source: <http://thefuturesagency.com/wp-content/uploads/2015/08/man-world-machine-1433643323643.cached.jpg>)

To understand the meaning of such a lack of efficiency, we have to recall some basic principles. What characterizes the life of a species or a complex system is a set of three properties:

- *autonomy*, which not only allows an organization to feed itself (hunting, fishing, eating, etc.) but also to manage energy (e.g. make fire, build devices for photosynthesis, etc.) and then to elaborate actions;

- *reproduction* corresponding to an increase in terms of diversification and diversified potentialities;

- *adaptation* or selection of “well-fitted” strategies to ensure the future of the species. Thus, life is not just information that we duplicate: it is a set of reactions to information that we try to replicate and disseminate.

Some of these principles are already applied in devices (robots, artifacts, etc.) designed by scientists and biologists. This is what we will develop in

Chapter 1 of Volume 2 [MAS 17c]. Generally speaking, we talk about life as an example because we intend to emulate human behavior and replace it, possibly in special situations (war, polluted areas, difficult access, etc.) or to develop so-called “augmented human being” or “virtual systems”.

The question, however, remains to know what is the purpose of life, or if our creations are in agreement with this.

Are we violating the basic principles of life? As Gödel said, are we sure that, going toward more complexity, we are not digging our own graves? Quite often, our society is only involved in basic/material contingencies and concerned with short-term goals. In reality, we can argue the following questions:

– is life intended to ensure the adaptation, development, multiplication or the endless complexity of a species or system, and how?

– is life, through the reproduction process, intended to ensure the survival or continued existence of a species via its progeny or generated descendants, whatever their level of adaptation?

– is life as we know it intended to accelerate the creation of new and better living species and avatars, able to dominate our “next” world?

– is life merely intended to ensure the evolution (through a coherent and consistent higher complexity) of DNA, that is to say, evolution of nature, a source of life in the global sense of the word?

People agree on the fact that, from the beginning of the emergence of life in nature, the essential goal of any species is to ensure its survival, hence its own existence, in a sometimes hostile world. Several points and approaches are identified and have to be redefined:

– *survival* is just a partial view of sustainability. It is a limited objective;

– *adaptation to a given use*. It requires changes in capabilities: the involved system will acquire or perfect some functional shape or pattern that allows itself to best ensure an objective;

– *co-adaptation* between several species (or a human being in relation with other conditions of life and functioning). Indeed, the notions of interaction, cooperation and/or competition are of utmost importance to exploit the concepts of synergy, complementarity and dominance. From

there, some hybrid modes of functioning called “comperation” and “coopetition” were developed [MAS 06b]. We will not detail them there.

Eusociality, as defined by Michrner (1969) and Wilson (1975) (see [SHA 95]), is used as the highest level of the social approach in a hierarchical organization. It uses some concepts based on skills classification and also speciation to improve again the mode of functioning within a community. Eusociality is well known by those who study the behavior of social insects such as ants, bees and termites. It is focusing on the nature and degree of the division of labor, such as:

- the reproductive division of labor (with more or less sterile castes, workers or soldiers);
- overlapping generations with people getting more or less experience in different areas;
- the cooperative care of young while the workers are doing something else and so on.

For what purpose? This is specific to companies and organizations who can perpetuate some specific cultural values as well as accelerate the transmission of knowledge, know-how and expertise. It is a kind of optimal problem-solving approach because the work and actions to be done require a minimum of energy and time expenses. In Chapter 4 of Volume 2 [MAS 17c], we will explore these concepts in more detail; but right now, we have to keep in mind that eusociality is a basic approach found in the social networks and Uber systems: it explains how the emergence of BDI occurs and how the emergence of new business models is shaping the society.

### **11.3. Speed of evolution and geometric growth**

In the evolution, power laws are an excellent factor to deploy inheritance characteristics, to explain how pattern can emerge through a self-organized system, and aggregation mechanisms, and how inherent properties can develop.

Indeed, and this is a natural phenomenon, the property of being distributed according to power laws is always conserved under addition, multiplication, power transformation, min. and max. of several effects.

A power law is the form taken by a remarkable number of regularities in economics and is a relation of the type  $Y = kX^a$ , where  $Y$  and  $X$  are variables of interest, “ $a$ ” is called the power law exponent and  $k$  is a constant.

Many aggregation mechanisms, economic evolution, life sciences, diseases, failure diffusion and communicated feelings take into account the power laws. That is, in fact, the best representation of any evolution in nature, from the Big Bang up to the cosmos. Regardless of these basic mechanisms, we can quote: macroeconomic scaling laws, the distribution of income, wealth, size of cities and firms, the distribution of financial variables such as returns and trading volume, diffusion of failures in machines and so on.

This is what we can observe indirectly when we analyze evolution of species. They also use several organizational factors that reflect not only the specificities of the subject/agent itself but also its role in the environment. For example:

1) In the struggle for survival of species, the concept of geometric progression, which characterizes, in general, their increase in number, always applies: indeed, it is important to compensate early life and random losses (life and death process, infant mortality, etc.), degradation or disappearances of individuals in some local areas, because in any complex system, opposing forces and phenomena occur: action–reaction, creation–destruction, prey–predator and so on. Therefore, more species are born than those required for surviving and reaching a normal quantitative equilibrium. Similarly, within a company, it always produces more products (or component sets) than can be requested for the same reasons. This is why an overproduction rate is predefined in any critical parts procurement.

2) Each system is changing according to a more profitable result, to give the greatest chance of success or survival. Once the best-suited prototype design is achieved, the resulting product/agent of this selection will be reproduced and disseminated in order to perpetuate and propagate the system/species.

3) Species subject to mutation and to be selected are gradually changing “products”; they are seldom the result of a spontaneous generation from scratch (*ex-nihilo*). It is a process of continuous improvement punctuated (as we shall see later) by breaks. However, the best-fitted patterns and structures

are not, either, immutable: the environment with which they are in constant interaction also varies and the adaptation process is never interrupted.

In industry, as already suggested, the goals are the same, but the declination to know what is the final purpose of a business is different:

1) When the question is asked to business leaders, to know what is the purpose of their business and organization in the current environment of the society, they usually give three reasons: wealth creation, employment and business activity creation.

2) More rarely, the approach uses some kind of biological reasons: it is argued that the company is like a living being: without growth, it begins to decrease and goes to its death or disappearance.

3) In some Western countries, where the generosity of elected leaders and decision makers is well developed and exploited (with the money and goods of others), the trend is quite strong to bring attention and assigns funds and help to sick and weak companies rather than to innovative ones, able to generate businesses as well as creative, ambitious and promising growth. Here, this subject company has a positive social purpose.

Below we give a brief history of what the concept or purpose of the business must be:

1) In France, during the 17th Century, the goal was the enrichment and development of the Kingdom. At this period of time, for the Colbert era, many companies were launched and developed in new fields of activity; new businesses were funded by the Nation not only as a sponsor but also as a buyer (e.g. the Saint-Gobain company in glass industry). At the same time, in the 1660s at the initiative of Cardinal Richelieu, the “*Compagnies Françaises des Indes Occidentales* (America and Canada), *des Indes orientales* (Far East), *du Nord* (Baltic) *et Levant* (Asia)” were established. This fulfills a biological-like need, because the entire French population could benefit from this initiative.

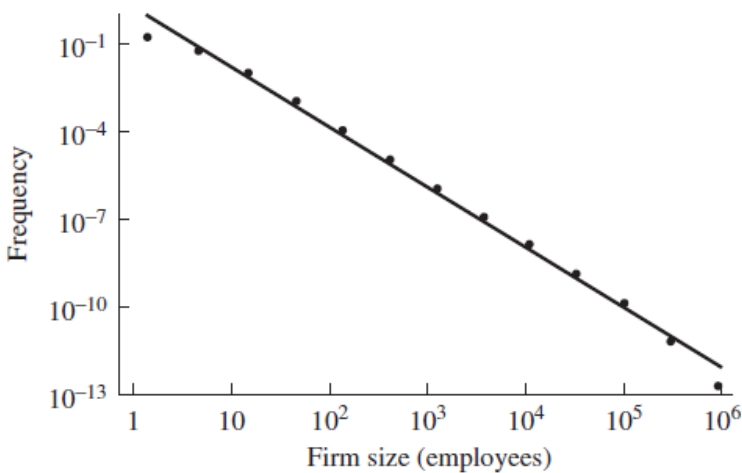
2) From the beginning of last century, industrial companies are legally independent organizations; they combine different production means to provide goods and services that are sold on a market to make profit. Earnings are primarily used to cover the return on invested capital. The providers in capital are quite varied: they may include independent proprietorships, partnerships, external corporations and so on. Therefore, we



went from a biological scheme to a more individualized economic model with notions of strong returns on investment with a smaller number of recipients.

3) Today, the concept of profit earning is a major concern: because of the strong individualization of our society (due to Hedonism) associated with the emergence and dissemination of the so-called greed attitude, many changes have occurred. The recipients are primarily shareholders and company executives and to a smaller extent the employees of the company; the risk-taking, however, is only concentrated on the private shareholders. Therefore, we switched to a “cancer” mode, which was only generated by the distortions of our society.

4) Each time we analyze the size of the companies, we observe the same distribution, in terms of importance (see Figure 11.4).



**Figure 11.4.** *Distribution of the size of companies in Europe [GAB 04]*

## 11.4. Organizational consequences

Finally, with regard to the concept of geometric growth rates discussed above, we can transpose these statements in the industry:

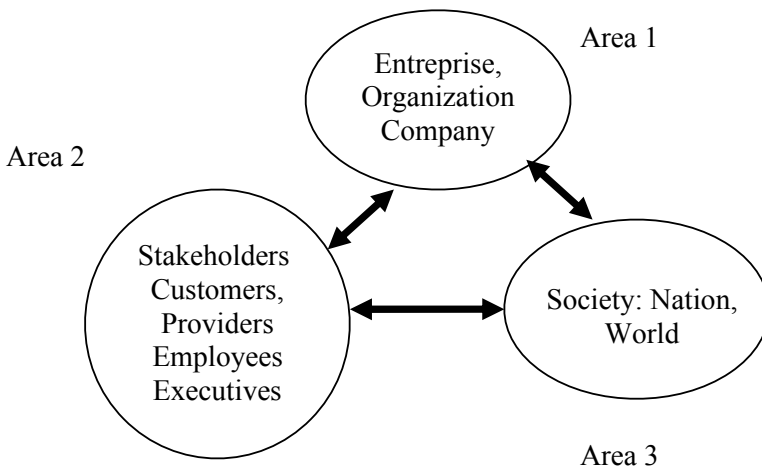
– For the production or reproduction of goods and services, the same multiplication or propagation process applies in marketing and distribution.

Also, that is what we observe in terms of resources, energy and effort consumption required to produce same goods.

– Are we still manufacturing more goods and services than required to satisfy our needs? Is this simply because there are scraps, garbage in provided parts, dysfunctions or even volatility in manufacturing processes? Is this a good enough reason for not being ethical?

– Again, in terms of objectives, what are the differences, about the content and finality, between an industrial objective and the one used in nature? What is true in nature?

What has been discussed above is not relevant to existential questions: these are substantive issues that go far beyond the concerns of environmentalists or “free riders” and any kind of parasites. It just consists of knowing whether the business models and organization built by human beings are consistent with the final purposes of Nature: are the business models we have developed viable? It is a question of sustainability, holonism and reliability of our creations, and, in a direct way to ensure our survival. In fact, it should be noted, within the framework of this section, that interactions to be considered are linking three subsets, or areas, of agents, which are located as follows (Figure 11.5).



**Figure 11.5.** Significant interactions in a production system

### **11.4.1. *Discussing the situation in between the three areas***

We may pay attention to the fact that relations between a company and stakeholders are of key importance today. Efforts are underway to involve companies in a wider role: we denote this trend as so-called “social responsibility”. The objective is to strengthen the relationship between Area 1 and the “full” Area 2 (Figure 11.4).

The debate, however, is unresolved, as the concepts at the individual level (because of the “hedonism” associated with the individualization of the society) are not yet taken into account; it is the same with the notion of ethics and more specifically the “professional ethics” they cannot be modeled and formalized because they directly involve the individual consciousness of each person. Hence, the survival problem between Area 1 and Area 2 is not fully covered.

Here, we are neglecting relationships between the two subsets (Area 2 and Area 3) since they are out of the scope of this section.

Similarly, if we consider Area 1 and Area 3, we are addressing the “societal responsibility” of a company. At present, this point is not fully covered by the so-called SRE (Social Responsibility of an Enterprise). There is a big gap between industrial companies – they are often like “multinational” or “transnational” corporations – and governments: the concept of their “global governance” is not a common topic with common interests. Many responsible individuals talk about “e-governments”, meta governance, open governments and so on, but nothing is really defined and effective. It is an open question.

By analogy, it is like if we were trying to run without our cerebellum or brain, and vice versa. In terms of “survivability”, we are not ready for controlling “nature” or the evolution of society, and we can still improve our governance approach. Indeed, everything in nature is based on antagonisms and ambivalences. Consequently, we have to keep in mind some new paradigms, all of them related to key “sustainability” issues:

– with new technologies, robotics and transhumanism, it will be increasingly difficult to create new and enough jobs;

– the evolution of societies weakens freedoms because it creates more and more laws, prohibitions, regulations, rules and laws. Therefore, the freedom of each citizen and the spaces of freedom are strongly reduced;

– in terms of governance (through the effects of the Internet and the social networks), there are fewer and fewer intermediaries between a State, its government and individuals; hence, a change of political structures is required to reduce them, to implement the simplification of the governance through a country: who can decide what is good for us? Who can generate and elaborate a real “citizen and democratic constitution”?;

– new technologies provide some autonomy, capabilities and authority to each of us (e.g. Google and Big Data), but they reduce our autonomy because everything is known, everything is seen, nothing is neutral, everything becomes unbalanced (information asymmetry);

– the collaborative economy is an indisputable advantage, but sharing economy and information is also a spoliation: when information is shared, we cannot gain any advantage over a competitor and are becoming dependent of a structure!;

– the Internet provides better communication facilities than those in the past. It enables reducing the exclusion of many populations, but it changes so quickly the economic context, the content of jobs and the emergence of new needs, which accelerates the phenomenon of exclusion!

#### **11.4.2. *Discussing the situation inside each of the three areas***

The concept of survival in our society is such that we can no longer easily ignore that death is part of our evolution. Indeed, there is an antagonism between transhumanism (extension of life) and the need for freely disposing and leaving one’s life as desired:

1) At individual level, physical death is sometimes considered a catastrophic failure and everything is done to delay this occurrence. It is a public health problem and many discussions are currently underway on this subject, associated with various debates on aging and so on. This thinking is quite developed and, in Western countries, for instance, we try to conduct wars (to play war games as well) in a surprising way: violence is focused on the acts and images, concentrated among partners who are the opponents, but there is no death, or dead people, in the winners side; it is a “clean war”.

2) In companies, the same philosophy applies: quite often, we hear about strong management in the business and about the so-called “killers”: for example, a “cost killer” in the procurement area and so on. Anyone accepts, and this is the same with the employees, that some people can be fired or promoted, just to save a company (it is a kind of altruism). However, no one allows the fact that a company can go bankrupt and die because this is the end of a source of revenues: that is when an entire community stands against such a deadline. Then, it is the start of operations conducted by politicians and public authorities to avoid or delay such failings.

3) For different reasons, whenever a country is threatened with bankruptcy, the entire international community is implicated and participates, through the banking system, to save an entire economy. This is the reality. It is true that interactions between each country and societal issues are such that everyone is forced so as to cooperate to avoid or delay the collapse of a country. This contrasts with the approaches used a thousand years ago, when a war ended with the possibility of the end of a whole nation. Now, given the concepts related to a general interest, our cultural and economic concept of the death, our mind is more than ever oriented toward survival and global approaches.

This is why our strategies about death and survival have deeply changed our recent views in terms of monitoring, management and control of complex systems.

### **11.5. Evolution of life: impact on management decision systems**

All these considerations about life and its aims thus pose the problem of how complex systems are managed and controlled in life sciences. We can observe, more specifically, how a person obtains a robust decision, steady adaptations, and how we can replicate and propagate a solution. To do this, we can proceed to a set of observations, model them and transpose their principles and mechanisms into the industrial, economic and administrative systems under study.

This section describes some challenges related to decision support systems. Several types of problems were identified. Among them, we can select the following because of their link with biology, brain and their connection to survival principles. They concern:

- data collection and measurement, and more specifically the perception of subjective and sensory data. This is of key importance in an enterprise where decisions are based on not only factual data but also perceived feelings and information communication;
- the organization of decision processes (just because the brain does not work as neither an artificial neural network nor a conventional computer);
- the decision process includes, most of the time and mainly for complex decisions, the human being, which involves reasoning, emotional and computational capabilities. The emotional part of the decision process is generally not modeled in our business intelligence technologies and it is important to try understanding what kind of paradigm we are faced with.

Why the concept of the “brain”? What are the relationships with the above comment? Indeed, the brain is a culmination of life, in terms of management authority, control, monitoring and steering entity in life sciences. It is a model to be studied: here, we will just highlight some few characteristics and determine which ones are best suited for a possible transposition and improvements.

The advantage of analyzing what is happening in the brain is that it is able to process either sensorial data or quantitative and qualitative information; thus, it is a model aimed at understanding some innovative decision-making and to perform better computational and reasoning activities, based on data or knowledge.

### **11.6. How does the brain work? Are we exhaustively perceptive?**

In network theory, the first encountered need is related to the communication between nodes or agents. This regards the exchange and transportation of messages and information throughout the network, between the agents, which can be computational centers, database centers and so on. In telecommunication systems, and this is rooted in our minds, everything is wired (the information exchanges are often done through wires and connectors). It is only recently that the growth of wireless features and

protocols has emerged: the transfer mode could evolve toward less physical constraints and became fast and less expensive.

Also, for pattern recognition purposes, artificial neural networks were developed; in the same way, these programmable networks comprise several interconnected nodes. Here, the wiring is done by software, but the main basic principles remain the same: individual pieces of information are processed at node-level and propagated in the network to influence the evolution of each node in the neighborhood. This structure is simpler but quite similar, in terms of structure, to the one encountered in the brain.

Neurons communicate with each other thanks to axons and through the synapses by an exchange of molecules (synaptic communication using neurotransmitters) in ionized channels. However, the migration of such electrical particles creates an electric field in the vicinity of the synapse:

1) In terms of exchanges: this wave field can exert an effect on the neighboring nerve cells, changing their status and so on. This is equivalent to an information transmission that will change the state of the neuron neighbor. This is also equivalent to action learning. By contrast, as for the antenna effects in electronic features, MID or computers, and based on our experiences in advanced technologies, electrical fields can produce some disturbing influences to neighbors. In fact by ripple effect, as in a programmable network, there can be a very fast propagation effect between axons: this has to be proved, but it would not be surprising to find such effects because available measurements show that we are used to see that electrical impulses in nerve circuits move much more slowly than electromagnetic pulses (reflex actions in the human body). This is a general fact: we are wrong in thinking that information transmission is done in a unique way from one node to another. In nature, there are many possible and existing ways to provide somewhere an information, quite often faster than thought.

2) Such speculation reinforces the fact that we are only studying communication between agents through the wavelengths that our senses can detect and measure. For example, regarding visual signal perception (here,

sight), the eye works only in the wavelength range of 0.4–0.8  $\mu$ . However, in nature, anything which radiates, or which transmits information, does so on a much wider frequency spectrum: as a conclusion, when observing our environment, our perception of the facts is physically limited: we are like a blind being and we are just capturing a minimum set of data in our environment. Hence, there is a lot of useful information we cannot use for perceiving correctly a situation.

Thus, with regard to the comments above, we can draw the following conclusions to be applied in any complex system:

- we often ignore most of the facts associated with an event because our perception of real facts existing around us is limited;

- it is difficult to detect weak signals (small signs foretelling an event) as well as for some hidden data we do not measure; thus, we are never able to anticipate an underlying risk;

- our ability to react, when faced with an undiscernible event or unexpected information, is sometimes too low and does not allow us to decide satisfactorily, in at-risk situation;

- in many information systems, decision makers are often reasoning and deciding from inconsistent data (incomplete or imperfect, contradictory, redundant, etc.). Most of the time, they correctly cover the most usual common cases. In a complex situation, however, we will analyze, interpret, speculate and generate rumors based on partial, biased and inconsistent information: this deviance associated with the so-called SIC is such that we will rapidly diverge from the real expectation (unpredictability in the future);

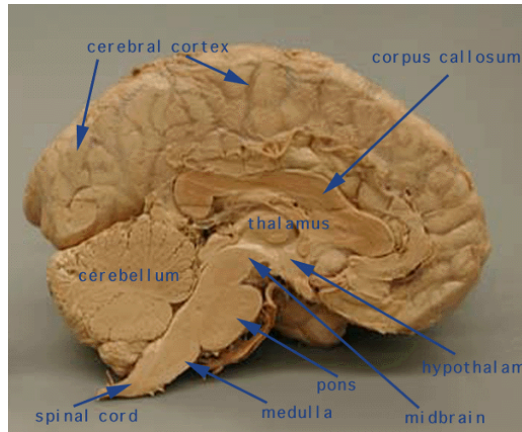
- it is known that too much information confuses the message. In fact, there is too much information in some areas of perception and not enough in others. Therefore, all systems of decision-making are “incomplete” (as per Gödel’s definition).

## **11.7. Levels of consciousness in the brain: application to DSS**

This section gives some more information in order to better understand what is going on (“*Bis repetita placent*”).



Any allusion to recent scientific results are detailed in Chapter 2 of Volume 2 [MAS 17c], dedicated to ethics and robotics. According to Antonio Damasio [DAM 10], Professor in Neurosciences at the University of Lisbon, the living being, to decide and survive, mainly uses three levels of consciousness as involved in cognitive processes. Let us take a look at Figure 11.6.



**Figure 11.6.** Legend (<http://serendip.brynmawr.edu/bb/kinser/Structure1.html>)

With regard to the above comments, we can draw the following conclusions that can be applied to any complex system functioning:

1) At the brainstem level, the reptilian brain ensures the basic functions of an animal necessary to its life and survival. The physiological system dedicated to regulations and the primitive impulses processing, such as irrational fears, are located at this level. These functions would be the first to occur during the creation of a living species.

2) At the midbrain or limbic system, the so-called emotional brain combines pleasure and displeasure associated with stored memories (punishment–reward system). Thus, there are memorization and analysis functions on specific information developed for regulating given internal organs/organisms. Again, at this level, we can perceive some fear and be sensitive to rewards.

3) Finally, the cerebral cortex or the neocortex, mostly located in the periphery, is the seat of learning, memory and consciousness: it enables the thought of a human being and labor activities such as the conscious planning of actions in order to be alive and survive. Thus, he/she can anticipate and understand certain or random situations and develop behaviors, attitudes, feelings and so on. In this area, we can quote the memory-prediction framework theory of brain function, created by Jeff Hawkins [HAW 04]. This theory concerns the role of the mammalian neocortex, its associations with the hippocampus and thalamus in matching sensory inputs to stored memory patterns and how this process leads to predictions of the future.

It is important to note that the artificial decision support systems are structured following the same architecture. Without conducting a formal critique, we can note that in industry or economy, for instance, most control and monitoring systems provide functions on the basis of signal analysis compared to thresholds; then, these tools select and generate control actions and regulations that are applied to organs or “agents” to be kept under control.

Sometimes, for better reactivity and adaptation, some “reflex” processes were designed and integrated in more complex tools; within this framework, the “artificial neural network” was developed. Through its learning abilities, and its “life and survival”-like-oriented capabilities, scientists thought we had discovered a way to eventually replace human beings. In fact, we are far from reality because ANNs are only over the first level of unconscious action or basic functions as existing in the brain; moreover, we are not yet able to achieve artificial neural nets, including several thousands of synapses, structured in a complex way, as observed in reality.

Also in the same field of smart management and decision, recent studies have shown that to make a complex decision, it was necessary to integrate two components, associated with the limbic and neocortex systems, as explained before:

- Reasoning: It relies on knowledge, logic, memory and computational processing to develop decision strategies. However, such computational systems are of deductive and logic nature. The brain can simulate thoughts as subsets of these operations. However, the brain has no hierarchy of logic

gates and operators as a computer has [DOZ 02]. A deductive system has no place for love, hate or fear.

– Emotion: At this stage, we are switching to the active mode of decision-making by introducing some psychism: associative and emotional capabilities are necessary to link ideas, strategies and emotions. To take action and a decision in practice, we have to decide timely and in the most appropriate way. Here, the emotional part of the brain is required. Indeed, to make a choice, it is necessary to quickly assess a situation, enhance the impact of an action, motivate ourselves and “feel” when, how and whether to take a decision or not. We have to keep in mind that logical conclusions and needs to act have, quite often, emotional overtones as in, for example, the judgment that a greed attitude in economy is not only logically incorrect but also despicable, unfair and lacks ethics. Only the human brain is able to associate such emotion to the achievement of the decision process.

Thus, we see that it is the second level of consciousness in the brain (emotional) and the third level (reasoning), which are mainly required to take a complex decision. We therefore did not invent anything new. Some millennia ago, the lives of individuals were like ours: filled with achievements, setbacks, cooperation, competition, rationality and strong emotions. We have just added, in our modern practices, a different culture and the automation of some processes and human activities.

If we try to make an assessment as to the reliability and adequacy of support systems for decision in our education systems dedicated to future managers:

– the emotional part of the decision is not integrated into management courses in most major business schools: this is simply because the decision support tools that are taught are of the analytical kind; mentally, in the business area, we are rationally working without any emotion. Also, it is often said that economy is ignoring the emotion. At last, we do not know how to model and put it into equation the subjective part related to the emotions?

– regarding reasoning, we are not much better ahead: cognitive processing is based on deduction, abduction and induction mechanisms. Being indulgent, our decision support systems can do satisfactorily for the deduction. In terms of abduction and syllogisms, there are few existing tools,

often not exploited, as we do not know how to proceed with new created knowledge; finally, at the level of induction, it is a virtual desert.

### *11.7.1. Survival and decision-making: what makes the difference?*

Before reinventing the wheel, it is advisable to recall some simple facts and to comment on what we are doing in our daily practices to take a decision. Briefly, our approaches, methodologies and tools are widely depending on information technologies:

– In our technocratic management and decision support systems, we are able to process, at high speed and in simple ways, great volumes of information. In contrast, in our brain, we can carry out more complicated processing with lower volumes of information.

– Our DSSs are based on conventional technologies (statistics, operations research, knowledge-based systems, information systems, etc.), which are only a few centuries old. Our brain, meanwhile, has an architecture and processing capabilities that evolve over hundreds millions of years.

– The final purposes of the systems are not the same. At the human level, the technologies we have developed are designed for developing a business, to help us in decision-making and to enhance some of our capabilities (augmented live beings). Therefore, at this fundamental point of view, the objective is to make decisions depending on maximizing profit or minimizing loss. In the brain of a human, the objective is broader: it is the survival and evolution of a species that has to be considered. Then, approaches in use are quite different: the objective is to avoid a risk and then to manage the replies to enhance his adaptation and domination.

– Our artificial bio-inspired systems are based on the development and implementation of functional models, which can be very complicated. Meanwhile, the brain uses small and associative computational units which are much simpler (a neuron or a set of neurons), but interconnected, and in very large numbers, as we have in programmable networks.

Therefore, despite appearances, the architecture, mechanisms and techniques used in actual DSS (Decision Support Systems), Operations Management (OM) or even Business Intelligence (BI) tools are totally different from those present in the brain. We could say that our practices have been automated, accelerated, but our in-depth ways of thinking and our decisional culture has not sufficiently evolved.

Coming back to the level of consciousness as expressed in the brain, and more specifically related to reasoning, it is not only distributed in the cerebral cortex, but arises with regard to the activities emerging from several brain levels (the brain stem that connects the cerebral hemispheres and spinal cord, himself crossed by the sensory and motor pathways of the living body). Indeed, there is first an opportunity to immediately capture the sensory information that is going to the brain, then, to process and prepare fast decisions. In this strategic area, the reasoning ability is quite elementary and rough: it is primarily intended to provide the reactive survival of an individual. For instance, Professor Damasio bases his demonstration on the example of a lizard that is capable, with its tongue, of capturing a fly in few milliseconds and swallowing it: in this case, we can see that pattern recognition techniques and reflex actions are necessary (attack or escape, etc.).

It is therefore, as experts say, of an awareness consciousness (the “*protosoi*”) which is fundamental and at the basis of *homeostasis*. At this stage, a live being can assess its internal state and thus maintain its internal equilibrium: ability to control its statements, feelings and internal sensations, to answer its needs and satisfy them is necessary to perpetuate its attendance, that is to say its survival (resilience purpose).

In a second stage, awareness is the basis of any action/reaction to improve any adaptation. Indeed, it is then necessary, once internal changes and disruptions are detected, to immediately analyze them, to compare them with predefined or experienced scenarios: here, the “consciousness-core” of a species can react and adapt itself to the environment.

This architecture is important: it shows that the coping and adaptive mechanisms used in information systems should always be located at the lowest level of any IS. Adaptation is a basic property of any “smart system”; its design must not require a complex model for its development and implementation.

### 11.7.2. *Consequences*

Here, we have discussed the fact that human behaviors are based on equilibria. As everything, in nature, is based on quantum fluctuations, fractal discontinuities and nonlinearities, equilibrium calls for antagonisms with positive and negative feedback effects depending on the situations encountered and within the context in which they occur.

In the brain, the same effects are observed in different locations: the areas of the sympathetic (to deal with emerging actions involving fight or flight reactions as appropriate, for example) and the parasympathetic (more oriented toward functions such as rest or digestion, which also implies a high consumption of energy, in a different way).

Also, as mentioned earlier, this approach is used in all the so-called “duality” phenomena, in any level: physics and material, genes, life-forms, planets and so on in nature.

Not to deviate from this rule, this involves to design and develop, in any business and organization developed by a human, adaptive control and management systems incorporating such a duality.

Similarly, at the highest and most sophisticated level, the cerebral cortex, it is the “autobiographical consciousness” that will allow us to remember past situations, our history and experiences, recalling the past and deduce meta-knowledge to better anticipate future situations, innovative approaches and solutions. Thus, we can draw some lessons:

– As the brainstem is a primitive structure, typical of many living species, even reptiles, this means that most of the animal and human kingdom can make decisions. In a company, any employee can also take consistent decisions: this raises the problem of sharing and distributing the authority and decision process in a complex organization.

– As we can make predictions based on previous experience and knowledge and perform analogies to determine best-fitted actions, we can focus our interest on knowledge technologies such as “syllogism” and “case-based reasoning” (CBR).

– Because we can make a statement on a past situation and anticipate future situations; for this reason, we can express satisfaction and dissatisfaction, but also fun and disappointment or pain. These feelings are a characteristic shared by living beings: by analogy, in any complex organism, they are a guarantee of quality in terms of vision and perception of a statement. Therefore, “pain” should not be considered an expression of weakness and human fail, but as a natural reaction to rebound and survive.

– Finally, any decision-making process always includes a rational part and an emotional part, and an objective part and a subjective part. We cannot make a reliable decision based only on pure facts. Any imbalance in one direction or the other inevitably leads to a non-decision and/or a bad decision.

## **11.8. Ethics: new ways of thinking**

Before addressing the subject of consciousness, it is necessary to introduce the notion of thinking. Thought is the result of the human brain activity. It thus submitted to the same structural constraints, the same life principles and the same mechanisms that underpin complex systems.

Thus, ethics, which mainly call, for basic properties of consciousness, will require the combination of a set of four elements:

- the thinking process itself, with reasoning capabilities;
- feelings associated with emotions;
- sensations and intuitions that are sometimes linked to unconsciousness;
- the perceptions and status of our different organs and sensors, in our body.

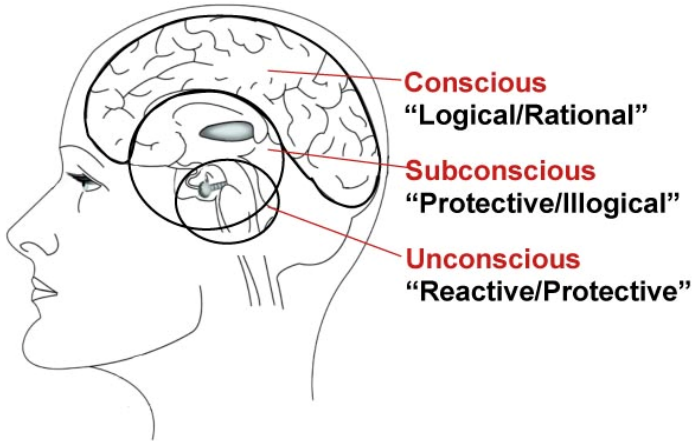
As for management control, ethics is submitted to the same evolution rules. It is continuously and progressively changing and adapting to the context of the environment. Deciding to always maintain the same properties in ethics is equivalent to deciding to wipe out a civilization just because it could not, or did not attempt to adapt.

### **11.8.1. When consciousness leads to ethics?**

The subconscious drives our inspiration, intention, mood and perception.

Consciousness and action follow from this. Consciousness strives on experience yet transcends it. Can we and should we attempt to anticipate the worst? Surely not, the good and the best are always necessary in the name of the ambivalence principle: “*everything is relative, everything is ambivalent, and dreams can’t exist without nightmares*”. Therefore, ethics, its pattern, at a given time of life, will be a set of subconsciousness, consciousness and reasoning.

The issues we have developed are the result of the problem of anticipation. As nothing is predictable, the objective is not to know what will happen and when but what can happen and/or what could happen.



**Figure 11.7.** Brain mechanisms: from unconscious to conscious [STO 12]

### 11.8.2. Consciousness as an iterative feedback process going from one level to another

As recalled in this chapter, Consciousness is the last assembly layer, and it emerges from our thinking and is the result of a specific kind of processing in our brain. Even if there are three main factors involved (such as sub-consciousness, consciousness and reasoning) to generate ethics, consciousness, by definition, will be the major contributor.

Is ethics the only end-product of consciousness? The answer is “No”, but is it the last and most sophisticated form of complexity of human kind? Should consciousness deserve a bit more depth? Are human beings a “machine” dedicated to produce consciousness?

Human kind is truly like a *biological machine*. Yet, beyond biology and consciousness, there is the “spiritual mind” (see Chapter 8 of Volume 2 [MAS 17c]). Therefore, we go from the *knowledge manipulating* state to the *thinking* state, then to the consciousness state, and we get to the *imaginary* and *dreamy* state (and why not to total happiness/love?).



Going back to nature, and to the notions of co-evolution, there are communities of individuals, apart from humans, in strong systems and that auto-organize. Similarly, the interacting individual consciousness becomes more complex and generates supra- or meta-consciousness (a convergence toward an attractor of the “collective consciousness” type through the transpositions/evolutions of these individual consciousness). Beyond this point, we would be speaking of extra/multi-terrestrial universes. That is the kind of information that would then be possible to transmit, because since the beginning, all is information (material and biological). In our Universe, everything starts with information (the basic rules of life/evolution) and everything ends with information (this is our heritage).

The notion of four dimensions, far from being a naturally occurring phenomenon, is a human mind construction. While we uncover how our brain works, we can measure the developments to integrate in terms of governance sustainability or, more specifically, management. For instance, the management process in a company was first geographical, hierarchical and rational (procedural), then became organizational and finally involved the entire company.

Finally, the process becomes much more cognitive through the control of information, senses and emotions and physical perceptions. Now it will be dematerialized to gradually give a way to ideas, autonomy and to the unconsciousness. How can we conduct such changes? How do we transpose ethics?

To better understand new ways of thinking, we will go back to basic considerations relevant to sustainability, as expressed in our bio-capacity-oriented world (widely “resilience”-oriented). This will enable us to disassemble some quite conservative views. Overall, nature has provided us with some basic mechanisms to enable humans to survive, adapt and evolve. These capabilities are needed to cope with permanent changes to which we are exposed.

In the following, we will not study changes related to the influences of external resources such as air, energy and water pollution (since this has already been the subject of a previous book [MAS 06a, MAS 06b]). We will not focus solely on some in-depth changes brought about by technology (this is the subject of a separate chapter). We address two underlying

causes of the evolution of systems that are addressed by many of us, often in a subjective and emotional way, which have a definite impact on management systems and decision-making in enterprise. They are:

- the switching of wealth which highlights the rise of new countries and dominant populations and creates uncertainty, fears and changes in a society;
- the emergence of new thinking and new economic theories. A business is not just a process; it is a set of humans working together. This is subject to the underlying of major ideological, existential questions, and this modifies, of course, the concepts of culture, the priorities and motivations of each individual in a community.

Indeed, the economy, like the evolution of organizations and industry, cannot ignore some major changes in the cultural environment that will deeply alter them and generate new behaviors, new priorities and new strategies.

We can only regret here that companies, whose sole and understandable concern is expressed in terms of performance and competitiveness, do not have enough questions about their final purpose as well as on several points we will develop further: their operations, organizations and economic development depend on them.

How can we exploit research results and transpose scientific approaches to the real world? At present, everything is growing up iteratively (in pseudo-random mode) and is not amenable to prediction, as most results (e.g. fractals) belong to the imaginary and we do not know how to draw benefits for new products directly.

## 11.9. Life and equilibria in ecosystems

Companies as well as the military face three decision management levels:

- the strategic level, related to the long-term vision, main objectives, business plans and so on;
- the tactical level, which consists of defining the options we have to choose in a setting where the outcome depends on *not only* our own actions *but* also the action of others;

– the operational level, which concerns the definition and the application of the algorithm to conduct the action and thus to play.

We will do the same with business ethics. To stick with a given organization, we must consider three types of charters to fulfill the requirements of a company.

Quite often, to increase the chances of success, a player has to combine several tactics over time, according to the opportunities of the game. It is the same with ethics: nothing is definitively acquired, and nothing is black or white. It is necessary to find the right equilibria and to combine several approaches simultaneously.

This is exactly what happens with ethics. We will not describe in detail the theories behind the different decision-making technologies. We will just focus on the fact that an ethical solution is a tricky and complicated equilibrium between rationalities, emotions, psychisms, health, dynamic capabilities and desires. Life is an amazing and evolved field of operations: it is a huge, advanced and interconnected information system; it is a complex decision system, and the game theory or regenerative approaches are found operating everywhere!

### **11.9.1. Life: why and how? Perpetrating the survival of an ecosystem**

Life and death are normal and inevitable steps in the evolution of a system or a species. An individual can endure or cause death, but life is scheduled for this (cell death). However, as already mentioned, the same mechanisms apply to any system created by human beings, and, within this context, it is important to try to define in what time frame and when a major event must occur. This is therefore a function of underlying causes related to the existence or extent of the existence of life when a failure must occur, and then to know until when it is necessary to perpetuate the activity of a system [BRA 11].

Thanks to its autonomy, an individual is now able to independently choose and decide whether he/she can continue to live or should end his/her days/life. This “local” decision is absolutely not related to a “global” decision that will involve a full species, or a total system, because the

continuity of a species, an organism or an industrial system does not lead to an individual, alone, but belongs to an entire community.

Indeed, the survival of an organism or species depends on all the constituent agents because the life of a system depends on the interaction between these agents and the coexistence of each of them.

In other words, the survival of a system does not only belong to an independent external agent (he could be the CEO in charge of managing a company). Besides this external element or agent, who lives in symbiosis with the system he/she “manages”, he/she cannot decide alone, even with the agreement of a board of administrators, if the company must survive, die or otherwise, without being in harmony with all internal agents, society and depending on factors such as the entropy of the system, the energy levels available to be consumed and so on.

It is a moral and ethical issue:

– A moral issue. This is the reason why rules and laws are enacted, to ensure the best possible coexistence in a global environment: the decision to abort or to perpetuate the activities of a system or species is a complex process, especially when the system under study is itself complex.

– An ethical issue. This ethical issue, as already mentioned, cannot be modeled because it depends on the personal conscience of an individual.

In the following, we will describe global optimization related to a general interest:

– In the context of evolution, first we have to consider the behavior of the agent or individual involved in the survival of a system. When faced with a difficult situation, it is sometimes necessary to be selfish, but altruism is also necessary. We wrote that competition and competitive spirit were sometimes required at the local level, to survive and ensure the survival of a species or conversely to solve inexpensively (best global optimum) in a local problem eliminating or terminating the life of one or more agents of this species. However, the general plan is that altruism prevails because it is the general interest, through a global objective, not a local one, which has to be taken into account.

– Any global decision is a result of a collaboration between the CEO, a staff, employees and society. Defining a global decision (elimination of an entire system or a species) to ensure survival and continuity at a superior level (in terms of global interest, more comprehensive, or more complex/sophisticated than the earlier) requires embracing all the pros and cons of the ecosystem, evaluating the impacts and consequences of such decisions and then implementing a global modeling using system analysis. In this case, the assumption of a possible death of the system is not excluded, but it is delayed at the most appropriate time, as a “completed and global staff work” approach with respect to the interest of everyone (stakeholders and nature).

## 11.10. Conclusion

In this chapter, dedicated to mental concepts and mechanisms of life, we detailed a few approaches at the human level, resilience-oriented, to solve problems encountered in either business ethics, economy, our day-to-day life or social living.

For instance, when discussing management systems used in a company to motivate people, we know that the individuals have to first be happy in their work. Happiness requires a sharing of responsibility, lives and destinies. However, nobody talks about ethics whose objectives are precisely the ones we have mentioned above.

To summarize, we can say that society is permanently evolving. Taking into consideration recent decades, we can say:

– Society was primarily a *society of duty*. Everyone was concerned about fulfilling his/her tasks, doing his/her job as best he/she could, to be responsible for their elders, devote him/herself to his/her workplace or participate in social activities.

– More recently, our *society has become hedonistic*. Hedonism leads to a new form of globalization. It must be built, or redesigned on the basis of new values, references and benchmarks. This is the current situation; sometimes, because of the lack of vision, governments do not pay attention to the fact that new boundaries and values have to be set up in society. Ethics is not simply a tool to regulate a new society, and this is why some deviances

relevant to pleasures, quality of life or even laxity have spread and invaded public and social life.

– *What next?* If we try to see a little bit into the future, it is almost obvious that Eudemonism is getting ready for the next step. It is related to a need of happiness, a feeling of fullness (the so-called “Love” by French philosopher Luc Ferry). Happiness can be considered as an end; it cannot be the privilege of a few people because the interactions in the global society are so numerous and strong that everything, any information is well known, memorized, felt, evaluated and shared, by everyone, and finally tagged in our mind, influenced by the new ways of social thinking and by the behaviors of our “neighbors”, in a global way, that is to say in the broadest sense of the term.

Under these conditions, the problem will be to complete our mental schemes and to integrate these concepts in the new management and decision systems. More specifically, it is necessary to include, right now, Eudemonism in our future production systems (here, production is a generic term in its widest sense).

If we look at the evolution of an organization, to identify the main recipient of the benefits coming from an adaptation, we have to consider some evolution principles common in nature: they are based on the progressive creation, over time, of codes [MAS 15a]:

- quantum code (code of matter);
- genetic code (code of life);
- synaptic code (code of thought) and so on.

We can imagine that nature is continuously improving and designing new codes: they are based on the previous ones quoted here above; maybe some already exist somewhere else in the universe; we do not know. Consistent with the graph of theories modeled in Chapter 1 of *Sustainability Calling* [MAS 15a], we could also introduce the following codes:

- physics code (code of energy, through entropy);
- networking code (code of complexity).

Ethics evolution must be confronted and follows that list of codes.

In this book on ethics, the new capabilities to be developed are only addressing the introduction of new technologies, and essentially mental capabilities. Here, we think about ethics: behaviors based on ethics are able to better control the behavior of the human species, to ensure its survival and its future evolution. Within this context and associated constraints suggested here above, we can see that a global and systemic approach has to be set up to improve the concept of ethics and adapt it to the future world we will be faced with.

At last, we will remember that a main factor that plays a role in the survival and sustainability of species is related to the “eusociality”: this is through the continuous implementation of such concepts, some speciation in the populations and the overlap of generations, as explained before, that a sustainable world can be ensured.

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## Ethics: Deployment in the Rotary

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### 12.1. Ethics: founding principles

The evolution of living beings in nature is based on a continuous selection and adaptation of their capacities, that is, the integration, in their mode of functioning, of predominant characteristics, which enables them to better survive in a given ecosystem. Therefore, a living being has to evolve toward the most favorable equilibrium in order to cope with risky or unforeseen situations, and hence the antagonisms that we all react to when faced with antagonistic situations. We say that ambivalences are a main property of self-organized or self-adaptive species; for instance, in the area of ethics, we could mention ambivalences such as selfishness and altruism, aggressiveness and laxity, greed and sharing, cooperation and competition and so on.

In our recent period of rapid technological development, and for economic reasons that we will not explain, there were excesses and abuses that many citizens had to endure. Hence, the fact that professional ethics has become necessary in our societies, sometimes too egotistical and unequal.

This is the basis for the birth of the Rotary. In what follows, we will take up a thought of Herman Willems [WIL 06] relating to the notion of ethics. Indeed, he states that: “Vocational Service is the very foundation of our movement. For the Rotarian, ethics in the practice of his profession must be at the same time a condition, a means and a goal”. Ethics meets our



expectations of duty that each one has to put himself at the service of a community.



**Figure 12.1.** *Rotary: an upsurge of cooperative, collaborative and participative services*

The definition often given to professional ethics corresponds to the notion of integrity and probity in the practice of a profession. As we will see, this very notion of integrity has evolved over the last few decades:

At the global level, more attention is being paid to the aspects of ethics applied to a given professional area (e.g. the emergence of “bioethics” in the medical sector, with new and increased capabilities brought about by genetics, or proteomics, for example):

- Doctors, physicians and nurses are constantly faced with questions about their ethical sensitivity toward people at the end of life, especially when it is associated with suffering.

- Corporate culture has also increased its interests in ethics: business ethics has led many companies to establish and recommend the use of codes (BECC) and the definition of best-fitted behaviors in this matter.

- In finance, it is the same: following the recent crises we are still suffering, negotiations are underway to review the gross remuneration and rewards of traders, and the use of hedge funds. A very important bill has just been filed in the United States to better regulate banking and financial transactions: the Dodd-Frank Wall Street Reform and Consumer Protection Act (a massive piece of financial reform legislation passed by the Obama administration, then reconsidered by the Trump administration for possible enhancements in 2017).

– In education (and elsewhere), the idea that a profession should be regarded as a vocation is already an old one, but the complexity and the difficulty of the relations between the youth and the teaching bodies has put forward the notion of “Ethics” as well as the one of “rights and duties” intended for students and society, especially at a time influenced by the loss of referents, values and reference points.

– In agriculture, the problem also arises with the use of pollutants and pesticides for plant protection: the objective is to produce more “organic” foods. Again, the notion of bio (which will not be discussed here) calls for the notion of “clean” food products that are safe and healthy. This approach has resulted in alternative practices such as sustainable (reasoned) agriculture and, more recently, biodynamics.

This approach, as has been written, is linked to the notion of “vocational”, which refers to both the activity performed within a profession and the vocation that corresponds to a task to be accomplished. This initially presupposes a dedication associated with a kind of gift; this is what some people call self-giving, a gift of a part of one’s time, a voluntary donation and so on. In return, this supposes the ability to obtain satisfaction deriving from it, or giving a meaning to our life.

## **12.2. The vocational actions of the Rotary**

In fact, the Rotarian behavior implies three approaches: first, probity or ethical integrity (linked to the belief that one has a duty to respect a given number of fundamental values); second, service (based on the collective search for a solution to resolve some specific societal problems) [WIL 06] and finally, to avoid “staggered” behavior in time or in context, one must know how to position oneself and how to adapt to best fulfill our role in society. Therefore, a Rotary member has to constantly think of how to best approach the encountered ethical problems. In this context, we must examine how our action may have a negative or positive impact:

– on those directly affected by the outcome (customers, sick people, students, etc.) and on those who perform the same activity as ourselves (colleagues, subordinates, employees, competitors, etc.);

– on our wider circle of interconnected acquaintances or actors (social institutions, people and communities that may suffer from our action;

– on the culture of those who are living in different continents and on whom we do not have to impose a unity of view consistent with our thoughts, education, economic situation and our sensibilities;

– finally, on the environment: our ecosystems are populated by living beings in constant evolution and must be respected to achieve a sustainable world.

In short, ethics, which dictates our personal behaviors, cannot be decreed. It is neither formalized nor regulated by laws; it is not the responsibility of a Rotary governor or an institution to make suggestions at a concrete level. An attempt of concretization can only be based, above all, on the broad notion of respect. Indeed, as often written, business ethics is the responsibility of each individual in the context of his/her work or activities. Examples abound:

1) Living in a society, as many sociologists or social agents say, implies observing a minimum of moral and ethical principles, and it is distressing to note that following the resignation of parents or guardianship authorities, so many young people, who have lost their landmarks and referents, become involved in deplorable incivilities.

2) In a very different field, the economic evolution implies a lot of adaptations. Insofar, as they are realized without “safeguards” by ignoring the actors with whom we interact, and insofar as we live in complex systems [MAS 08], it is normal to observe so many deviations that end up shocking society by creating situations of gross injustice.

All these examples can only challenge us because they have “rotted” our society, made life difficult and weakened us. Of course, some people will say that there are strategic manipulations undertaken by political unions or even by some emerging (or competing) countries, to take a dominant advantage or to recover a bad situation, but we must remain vigilant.

Thus, contacts, exchanges and discussions within a Rotary Club can contribute to an awareness in this area. Such exercise must be spontaneous, and it is the role of a “Vocational Service” committee, that is the most appropriate, to initiate the role of coaching to foster “business ethics”. It is not necessary to create a specific subcommittee on “professional ethics” in charge of this task, but to integrate and assimilate these notions of individual behavior to our actions.



**Figure 12.2.** *The Rotary logo of vocational services*

There are many ways in which the Rotary's professional work is carried out, without going over the 29 different types of vocational actions currently being carried out in our District 1700 (including 88 Rotary Clubs).

In total, more than 200 different actions have been recorded in District 1700. They can be summarized as follows:

- Regular and local actions at the level of a Rotary Club;
  - company visits and training,
  - professional conferences and presentations relative to various sectoral situations,
  - actions toward young people: sponsorships, career selection and advices, career development, seminar and trainings, internships and study programs in companies, scholarships and so on.
- Outward-looking shares;
  - fight against unemployment,
  - simulation of job interviews,
  - designing and writing CVs,
  - help on job search and job audits,
  - business creation, start-ups,
  - sponsorship of job seekers,
  - help in creating new activity, logistic support,
  - yearly awards for young CEO, entrepreneurship, innovation prize and so on.

- RYLA for young professionals and emergence of leadership;
- Carrefour des Métiers and assistance with vocational guidance;
- Discovery of the company with special training on;
  - goals, organization, functional structure and functioning of the company,
  - from CV to prospecting, hiring and integration,
  - career development.



**Figure 12.3.** *Rotary: Logo of the RYLA*

The field of actions is therefore very broad. As we can see, there is an emphasis on young professionals. All these actions, in which the Rotary intervenes, are impregnated with our ethical consciousness, that is, with the notions of good and evil attached to it; However, it is essential to avoid being moralistic:

- Action with young people always requires reframing and adaptation because the moral values of society are important, but mainly dedicated to adult people. Therefore, we have to be careful with differences and conflicts of generation;

- Visits and training in enterprises can enrich our technical knowledge. They can also deepen our understanding of the social needs and ethical aspects in a specific professional area and be discussed and challenged in our clubs;

- Professional action is also a way to share our skills and knowledge: this allows us to emphasize that it is always better to give a part of ourselves than just to give;

- The fight against illiteracy is essential: it gives access not only to knowledge but also to our enrichment (in the general sense of the term) and

our personal and social development. In our century of information and knowledge, illiteracy is a handicap. Can we observe those who are illiterate without reacting? What should we in the Rotary do, that others in society do not?

Without making some philosophy on questions related to business ethics, and therefore on notions of right and wrong (good or evil), our role is to indicate to others what seems to us to be most wise for them to be made happy or unhappy, so that Society can develop in a sustainable manner. Sustainable Development (sustainability is including ethics) is the way we must align all of our professional activities and thus play our role in serving the community [MAS 15b].

### **12.3. Do BECC help in developing business ethics? [DES 08]**

Globalization and the various crises faced by companies and our societies lead to deviances, behavioral drifts and, consequently, adaptations for recovery and new modes of regulation.

This is part of the evolution in nature: it needs disruptive disorders, reorganizations and adaptations to move forward and stabilize, for a limited time, in a new order or steady state. In the case of an economic crisis, this is not an easy game to criticize capitalism, which is, whatever the media say, the least bad of economic systems. However, it is a problem for knowing how to understand these new situations and how to mitigate and control their unwanted effects, in the light of our “values”!

To demonstrate our commitment to the present economic system and to anticipate the above uncertainties in a positive way, many managers of large companies or institutions have become accustomed to implementing behavioral recommendations and practices through charters, Ethics, Corporate Social Responsibility (CSR) agreements and so on. These documents help in redefining “values” that enable everyone to live together and participate in collective advances for an optimum and overall benefit.

The analysis of such documents shows that, in many cases, codes of conducts are closer to deontology and to internal rules than to ethics. Also, the practices that are described, to ensure control and monitoring of an human beings, are in favor of the system requirements; nevertheless, they are more often prohibitions rather than advices. It is therefore a kind of

legislation, involving the control of individual behaviors, whose objective and effect is to confine a person within a framework of prohibitions, to contain him to avoid uncertainties and reduce the field of the random space. Conversely, this is not a good way to develop the personal consciousness of a person and to ensure his/her senses of responsibility, creativity or initiative.

We are in a negative reasoning approach, in which the economic and social formalization of ethics becomes a simple management tool. These documents will also be used by companies as an external means of communication, with their stakeholders, and as a tool for managing their human resources. They can also be considered as part of a marketing approach, to give more confidence to new customers and develop business. Anyway and thinking globally: not being “ethical” can be expensive, and codes of business ethics are sometimes used as a means to achieve sustainable growth.

This standardization gives the advantage of refocusing people on the basic values of the company, to reinforce the community, then developing a corporate culture, reassuring employees and restoring their confidence and motivation, and motivate people around the core business of the company.

This is important in the event of any economic, moral or social crisis, but it has a counterpart: it is not with bans that a society can evolve and progress. Indeed, is not ethics defined as the search for an “ideal”? Beyond the laws, why not think on what is good or bad, in the business?

An ethical approach in the company is an approach that leaves room for personal initiative and thinking. Management of corporate ethics is a process that is part of a strong corporate culture. It involves dialogue and information exchanges with stakeholders, the awareness-raising and training of employees. Dilemmas on ethics cannot be modeled because they are part of the personal consciousness of an employee who “feels” that what he is doing is acceptable or not! We have to learn from each case study, identify the characteristics of each situation and develop our own ethical consciousness to use it when necessary. Codes of ethics are a good exercise to help managers develop this awareness. In this way, an ethical enterprise is able to give meaning to its actions.



Figure 12.4. Rotary: Logo of Ethics

### **12.3.1. Ethics: between an individual approach and formalism through BECC**

Companies have adopted codes to control employee actions. As seen above, these codes are most often written in the form of prohibitions and obligations, leaving little room for personal initiative. More often, these codes do not go beyond legal obligations, because even if they are similar (even if their coverage is poor) and used in most companies, most of them are like internal procedure rules. Currently, companies use codes of ethics as a way to achieve their direct economic goals: preserving their image and seeking profit.

When a company is involved in the drafting of a BECC, it is often a standard document, a thinking around good intents not translated into actions. In this way, we could assimilate the formalization of ethics as a code of ethics, being a “profitable” code of ethics.

However, what Rotary members are always saying: it is no longer a matter of making profit at any price!

We are indeed in a whole complex system: a company that claims to be ethical and responsible is involved in the search for not only financial performance but also an overall performance that is economic as well as environmental and social performance. It has understood that it is part of an ecosystem and that it interacts with many actors.



Business ethics is the guarantor of what is done in the company. It should create a climate of trust and a partnership between the company and its stakeholders. It must bear a “moral” ethos, that is to say, sincere, in the long term and not just a “profitable” ethics, that is, seeking short-term profit.

Finally, we have to keep in mind that ethical formalization is not enough: It is a mental predisposition and an organization (like the Rotary) or an Industrial company must go further to deploy Business ethics and to “manage” the ethical risks: the economic situation of 1973 in the United States justified an “organized” type of approach for Ethics. It took place only in the 1980s.

## **12.4. Vocational service: a difficult active concept?**

Many Clubs “Service” as the Rotary are very performing for actions involving the reduced commitment of a club member. For example: raise money for public interest actions, whether at local, national or international level [VER 07].

Nevertheless, in the field of business and economic development, Professional Action (which is one of the five central axes of the Rotary) requires, like any mentoring action, more commitment in time and listening, to share the know-how of the involved expert and so on. This is often a stumbling block, because on the one hand, active people are already in great demand, and, on the other hand, it is difficult to know how to approach a new problem in the field, since it requires the support of very diverse skills such as vocational solidarity, openness, entrepreneurship and pedagogy.

### **12.4.1. Application**

In [MAS 15b], we thoroughly analyzed the economic crisis following the 2010 Haiti earthquake. This was necessary to define the global context of this country: indeed, after this study, the Rotary District 1700 decided to rebuild, in 2012, a primary school (including 12 classrooms) in Port-de-Paix. The project management was very difficult due to the complex coordination that involved very diverse stakeholders, in either Haiti or France (with the 88 Rotary Clubs).

This situation was further complicated by the emergence of unusual behaviors and new “values” issued from the economic difficulties currently encountered: to speak only of the remuneration of each other, there has been much focus on greed, sharing of results, building costs, possible embezzlements, cost of human resources and certain leaders (those who are supposed to foster the economy), fairness, morality and ethics. The debates have often focused local and social self-organizations on the notions of morality or deontology, but as these notions were formalized in formal agreements the project was successful.

This case study, in Haiti, enabled us to draw general statements and results. In fact, in large projects, in an easy economy, the major change is related to the fact that any excess, like any creation of disparities, for the benefit of some people and to the detriment of others, may cause inequities and injustice and social drama, as well as always being badly accepted in a society:

- when in our Western world, the wages of the 10% of the highest paid people is increased by 10 times in 15 years, people will be shocked;

- when wages of 10% of those 10% and above increase by 40 times during the same period of time, people will be shocked;

- when the lowest wages only follow the inflation rates, the purchasing power of the people cannot be maintained: it regresses, partly because new charges have come to be attached to their budget, and partly because the lifestyle and needs of a family evolve over time.

Some consider these inequalities to be normal because they are linked to work, skill and risk-taking. They are not acceptable when they strike in a nonlinear way: when the so-called “rich” classes increase their resources or their income exponentially in comparison to the so-called “poor” classes, it is no longer accepted by the populations.

It is a question of common sense and it is a question of balance: in the end, this leads to a social catastrophe; in the sense of a disruption as defined in the “catastrophe theory” [MAS 08], it is this notion of acceptability that is relevant to ethics.

It is then various dilemmas that emerge. They are related to the finances or to the financial consequences of the company associated with CSR (Corporate Social Responsibility) and to the notion of ethics: this makes many people doubt or ask questions within a much broader range. Indeed:

- we may encounter these social problems in our own enterprise, to varying degrees and in different forms, depending on the sector of activity, the level of management considered and the economic pressure exerted and so on;

- how to integrate into our workplace the ethics subject matter, as it appears in society, knowing that the activities, cultures and values involved are different;

- these differences certainly lie in the fact that situations and opinions differ within the same group because the socio-cultural backgrounds of each one and their training are very diverse. In addition, the modes of thought are different at the level of the profession and of the employees' career development. However, the criteria of ethics depend on the way they are applied: which values have been favored over others? Just as we are attentive to excesses in food, what values were once overestimated to the detriment of the whole?

- in vocational service, everyone has the need to develop mentoring or professional sponsorship of young people, to participate in educational programs at school and to help in the choice of a professional career by giving children and adolescents an overview of some professional areas. However, have the principles of respect, trust, tolerance and so on been properly applied and integrated into ethics? For which values?

- What exactly does professional ethics mean? How far can and should we go? What level of commitment and responsibility should be implemented?

This always raises consciousness problems as to how to define and how to develop what is called: “knowing how to live together” while allowing the “advance of humanity” to be pursued.

In a final report entitled “Hundred Years of the Rotary, Inaction or Innovation”, published in early 2003, the conclusion was that more attention should be paid to the Rotary's focus on Professional Action. It is the only activity that mobilizes and motivates human resources and that differentiates

the Rotary from other Service clubs. By adding to this activity the notion of ethics, we provide a wider framework of service associated with a more complete and consistent model that can participate in the development of a sustainable society.

Rather than speaking of “inaction or innovation”, it would be more appropriate to show that we are at the frontier between reasoning and imagination [LES 06]: when a person is at the service of action, he/she is always guided by ethics and by the use that he/she wishes to give to his/her achievements. Thus, ethics represents a choice: whether or not to carry out some actions, following a given procedure, in specific professional fields and for certain actors or agents. In this sense, ethics is also a duty.

### **12.4.2. Ethics and complexity**

Going back to the previous section and thinking, it should be noted that in our modern, global and holistic world, any action carried out in a professional framework (whether of prospective, development or support type) requires a complex process: indeed, they are hybrid domains, many actors are interacting and nobody is independent. Moreover, as mentioned above, the notion of speed of information exchange, linked to the Internet and the access to information for all and everywhere in the world, completely changes the context: inaction cannot exist. Everything is moving very fast; not adapting and not being reactive is a sign of decline. This is why, for survival reasons, nature is based more on reflex actions rather than on reasoning. Similarly, when speaking of innovation, this implies spontaneity (reactivity) in addition to imagination (emergence of diversity). This context calls for a constant review of our ways of thinking, our technologies (involving methodology, techniques and tools) as well as human, philosophical and social qualities, in the sense that they constitute a particular mean to apprehend the world.

## **12.5. How to promote ethics in the workplace**

We will take as a basis here, a paper on leadership published in Forbes magazine [MEN 09]. It suggests that ethics has three components: (1) to

express oneself unambiguously, (2) to behave irreproachably and (3) to avoid any hidden or fuzzy information:

1) Express ourselves unambiguously. One of the most important things a manager can provide to his/her organization is a clear, true and precise communication, without any trace of ambiguity. For instance, describing a non-ethical consequence of an action requires avoidance of complex and high-sounding phrases as “strategic business practices” and so on. It is therefore a question of using simple expressions, explaining our position regarding ethics, and sticking to it.

2) To behave irreproachably. “Any behavior of course requires a thinking on values”. But values can also be the result of some thinking related to a behavior. For this reason, we have to include ethics in terms of objectives in the job description of an employee. This enables them to develop and strengthen his/her personal integrity.

3) Avoid shaded areas. Moral absolutism may seem an archaic and austere concept. Yet this is what is necessary in order to assert in a clear, firm and decisive voice what is right.

### **12.5.1. *Where to apply***

These above explanations and tricks are related to individual behaviors that are fairly similar to those that Rotary members have adopted, can practice and deploy, to underscore the Rotary’s commitment to Professional Action.

The professional skills, experiences and abilities of the Rotary members can provide a help to people everywhere. We can suggest some useful applications by undertaking some of the activities listed below: they are an opportunity to integrate ethics into everyday life:

- In a selection process, hiring interviews, training sessions or evaluations focus on honesty, accountability, fairness and respect;

- In internal communications, to highlight and acknowledge ethical behaviors;

- In a company, promoting ethics in our workplace can serve as an example for our subordinates and colleagues as well as for the community at large;

– In contact with customers, suppliers or co-workers, to demonstrate our commitment to rules of ethics and high probity.

More precisely, more concretely and without being a boy-scout, Rotary's commitment to high-probity rules and business ethics can be promoted as follows:

1) It is recommended, in our office, to display (in a prominent place, in the community) the 24 words of the "Four-Way Test" of the things we think, say or do:

- Is it the truth?
- Is it fair to all concerned?
- Will it build goodwill and better friendships?
- Will it be beneficial to all concerned?

2) Do not hesitate to apply this Four-Way Criterion in our professional duties, and why not discuss it with colleagues alongside the Rotary's commitment to ethics?

3) Be credible and believable: by demonstrating a personal commitment to ethics through our actions (professional, family or civic life).

4) Promote the essay contest: asking participants to explain how they can apply the criterion of the four questions in their daily lives.

5) Develop an action for children that integrates ethics into their reading activities. For more information, go to the Literacy Group at [www.rotary.org/literacy](http://www.rotary.org/literacy).

6) Organize Ryla seminars that focus on ethics: this was the case for the RYLA 2012 in District 1700.

7) Organize a workshop or discussion group on ethics, inviting non-Rotary business leaders.

COMMENT.– This section is a set of suggestions and questions to generate and facilitate possible discussions in ethics and then define recommendations to apply business ethics in a workplace:

– what are the benefits of ethical decision-making systems in a given profession, in your rotary club?

- how can you encourage other people to practice business ethics in their professional field of activity?
- how can ethics bring competitive advantages to a company?
- how can the rules of high probity in the rotary have an impact on the entire community?
- how can Rotarians’ high-probity rules enhance the public image of the business and that of the rotary?
- what should be our approach to face ethical problems regularly encountered around us?

## **12.6. Necessary collective action**

Aristotle wrote: “The whole is more than the sum of its parts”. Could not this maxim be applied to our Rotarian action?

Most Rotary members are involved in social, cultural, professional, international or humanitarian activities. These people remain fully devoted to useful social and professional movements that cannot be regulated with laws or rules because they cannot be modeled or because these members are already assuming, on their own, the moral obligation of service to others or service to the community [ALE 07].

The fact of carrying out collective actions at the level of a Rotary Club makes it possible to derive some advantages:

- actions carried out collectively are much more efficient and effective because the solutions to a problem are always more consistent, better designed (by emergence) and better adapted, as they are developed as a team (team building) or issued from a social network;
- the Rotary Club actions stimulate the emulation capability of each of its members. They are also unifying factors that improve the effectiveness and efficiency of a whole Club, focused on targeted actions;
- finally, within the framework of the development of business ethics, collective actions help to limit and reduce deviances, to better identify ethical problems, somewhere, and better serve the general interest.

This chapter, as clearly seen, often puts the Rotary forward, but the values developed within the Rotary Organization can, as many Rotarians have experienced, apply to any context and environment. It can be used by non-Rotarians who simply love notions of empathy, respect, justice and more generally the underlying mechanisms related to sustainability.





Therefore, depending on the cultures of countries and companies and their economic and social situation, the implementation of ethics will be declined in different ways. It is with this overview that we give ourselves here.

As we will be able to read, there are three major variations:

- Ethics may be seen from the perspective of BE (Business Ethics);
- Ethics takes the form of CSR (Corporate Social Responsibility);
- Ethics is a means and an opportunity for further development and allows a company to rebound in a new paradigm.

### **13.1. Ethics: more than a formalism, a competitive challenge**

In view of what is established in some companies or institutions, codes of ethics do not appear so ethical as that. Perhaps, that is why companies choose to call them codes of conduct. Between ethics and profit, companies have made their choice. An individual is not always free to think what is “good” or what is “evil”. His/her individual conduct is not the result of his/her free choice: it is dictated to him/her, the vision of the company is also imposed on him/her. Codes of ethics qualified as codes of conduct leave little room for personal reflection, the very essence of ethics. Can we still talk about ethics?

What happens when the manager is faced with an unexpected ethical dilemma? What matters, of course, at first glance is the general interest of the company. And when a decision has to be made quickly, it is reflexive and cannot encompass all aspects and constraints of the problem. On the other hand, in a stable context, the mode of operation is different and leaves more room for reasoning, that is to say, for the elaboration of a holistic type decision.

As a result, it would be more appropriate for the code of conduct to develop an ethical awareness rather than dictate behavior. Indeed, ethics is by definition a questioning. It is not enough to dictate a course of action to deal with this or that situation, but to instill a way of thinking, to develop the ethical conscience of the employees. The latter must be able to identify an ethical dilemma and adopt ethical reasoning. This “competence” does not pass through codes of conduct but through awareness and training of employees in ethics. Unlike written documents, ethics is not fixed in time but evolves according to cultures, the environment, what happens in the world and how it evolves. The ethics of yesterday is not the same as that of tomorrow: it always evolves and adapts, as it is a component of our ecosystem.

To return to the fundamental principles and even to repeat itself, ethics does not impose itself and does not improvise, but is reflected because it is part of ourselves. The company must include it in its management strategy. To respond to new management challenges, corporate ethics must not only be a defined or formalized minimum, but also be part of the management methodology. In this sense, the company must pay particular attention to its form of communication, leadership style, internal and external culture and decision-making systems.

Ethical formalization alone does not make the company legally responsible: as we have seen, an enterprise is evaluated and judged in relation to referents as defined for ethics, but not for the ethics that belongs to the personal consciousness of the individual.

The transition from “profitable” ethics to “moral” ethics will only be possible if the company changes its management model to respond to new management challenges involving “stakeholders” and manage the “ethical risk” (difficult to grasp, but very real) as an additional normal constraint.

Professional ethics are not limited to standards that must be imposed but to a way of thinking that must be transmitted and taken into account in the company’s information system. Ethics must not be a means to an end, but a way to achieve it. In other words, ethics must not be “profitable” but must be seen as an end in itself. When, in the preceding chapter, the concept of wages was evoked, beyond all the technical, economic and social considerations mentioned, true or false, it was written that what mattered was not to “shock”: when one shocks, one touches the emotional part of an individual and one’s frustration; ultimately stirring fight or flight in him/her (notion of “catastrophe”, in the sense of the nonlinear dynamics of systems).

To do this, we still have a long way to go, and the company will have to respond to the new management challenges to be truly responsible and ethical. The time of the client-king is over, and it is important to place the stakeholder at the heart of the system.

## **13.2. Business ethics: a contribution to management and organizations**

Having evoked the notion of “stakeholder”, we propose here to develop this aspect of things in the field of ethics [BER 09].

In recent years, the actors of many companies, administrations and even society have been involved in confrontations between technological logic, economic logic, social logic and even political logic. All these actors are decision makers, managers, employees, subcontractors, customers and so on. “Stakeholders”, as opposed to “shareholders”, have been considered since the 1980s as the sole and/or priority clients of a company or an institution.

This is due to an explanation and contains a rationality. We will not go into it in this chapter again.

Recent awareness in all areas of our lives shows that these stakeholders are much more active than ever before. It is for this reason that the emerging notions of “inclusive society”, corporate social responsibility or even ethics are so important: they alone can contain corruption, injustices badly felt by society, decision makers, compromises, abuses of some and so on, while at the same time restoring a little more equity, in terms of sharing results, if not assets or assets of an organization or a company.

At present, professional ethics is gradually being deployed in all sectors of the company. On the practical level, when it is implemented, if it is possible to express itself, it is accompanied by a panoply of formalisms, which are used in new management processes: ethical charters, codes of conduct, internal regulations and so on.

It is not a question of demagogy, but rather a way to better integrate into society, motivate people, guarantee products and services are better adapted to the needs of clients and so on. Organizations are therefore strongly challenged to move from one hierarchical structure to another. In the same way, the relationships between the actors involved necessitate extended relationships outside the company on a peer-to-peer basis. This is what is described in the network organizational schemes. In fact, we are a bit confused and there is no single managerial model. Conventional structures are overwhelmed by the fact that the new technologies that succeed each other at an increasingly rapid pace (Moore’s law) are neither assimilated nor rapidly taken into account in the evolutions of the company and society. It is a loss of control over the ecosystem and its governance: traditional managers are overwhelmed by the power of stakeholders scattered around the world. From a “top-down” system to a bottom-up influence, the power of management is increasingly linked to the persuasion and facilitation of a group of actors.

On another level, a company is a system of shared values.

In its internal functioning, a company will integrate ethics by adapting and complementing behavioral approaches at the individual level, motivating them and leading to more global, coherent, effective and efficient processes. This implies not only the creation of dynamic structures but also dynamic infrastructures, as the linking of people requires integrated, interactive and secure communication tools. It is therefore the whole information system of the company, in interaction with its customers and suppliers and its social partners, that needs to be reviewed.

When it is known that in any enterprise, the aims, objectives and modes of operation are guided by technological, economic, social, societal and human concerns, we can only observe the human component of the company. It also evolves and adapts to the new constraints of society: society evolves. As is the case with nature, it goes forward without worrying about past events. This is necessary because evolution is based on diversity and referencing is not done through past events, but thanks to their dynamics which are embedded in the ecosystem. It is therefore at the level of ethics, that is, on the level of the personal conscience of each individual, that references and guards are going to be put into play. Ethics, on the other hand, needs information systems: these are accessible to all, inform us on everything, highlight excesses and drifts that strike our conscience. They also have to adapt themselves to deliver non-partisan information (hence the value of implementing meta-information systems). However, it is also normal for man to make an effort to adapt these new approaches and technologies and adapt to them by integrating them into his own system of reasoning. The effort is one-to-one.

### **13.2.1. The Holism**

In Holism, we can rely on control structures to verify and validate the overall approach of the company. It is in this sense that the notions of morality, integrity, probity, respect or ethics can strengthen the harmonious development of the company, an institution and its internal and external partners leading to a better way to “live together”.

*Holism* is a neologism set up in 1926 by South African statesman Jan Christiaan Smuts for his work *Holism and Evolution* [SMU 26].

The first historical definition of holism is “the tendency in nature to constitute sets that are superior to those of the sum of their parts, through creative evolution”. That is, the tendency of the universe to construct structural units of increasing complexity with each forming a whole. Here, we have the roots of the system analysis approach that we always recommend implementing in any complex situation.

### **13.2.2. Professional ethics: human resources management**

#### **13.2.2.1. Complexity and emergence of new behaviors**

The first area we are addressing here is the application of these principles to human resources management (HRM). We can rely here on a remarkable article published by Romain Bernard [BER 09] on his blog on professional ethics. He established that Ethical Management defines a management that puts people at the heart of the company and that goes through what is called respect for human dignity. This concept is a global one: it is necessary to ensure the sustainability (e.g. the resilience) of humankind.

The reason is quite simple [MAS 06b]: for reasons related to the survival and resilience of species, living beings are social beings by nature. They need to be in touch with other living beings in the ecosystem because they alone are incomplete, vulnerable and not adaptive.

When we talk about harmonious development, we think of group life and its environment and we put forward the notion of cooperation, interaction, mutual help and so on. In order to participate in collective progress, in this context, it is customary to promote the notion of synergy.

Conventionally, Synergy is defined as the association of several systems, agents, organs or actions, for the performance of a function, or the attainment of an effect, the overall effect of which is greater than the sum of the effects of each component, or action taken separately.

In fact, the reality is quite different. The evolution of living organisms in interaction is based on the learning of the best possible equilibria (at the level of the *acquis*) and consequently on the dynamic modification of the existing organizational structures (thus of the *innate*). This brings us to several points.

1) When we speak of beings in interactions, relational relations, cooperation or competition and so on, which are the basis of the emergence of orders and of what is called collective intelligence, we can ask ourselves more precisely what it is, especially when we are interested in a group of living organisms, such as a population of animals or employees in an enterprise.

To make choices, the best or the worst possible, every individual needs diversity in terms of his/her way of thinking, perception of things, sensibilities or tendencies to react in a specific way to an unforeseen situation. As an example, let us take the case of an individual exposed to a specific risk such as aggression by a criminal: in some cases, depending on the judgment he/she has of a situation, he/she can escape. In other cases, it will be more appropriate to defend oneself and administer a beating. There is therefore a confrontation between two antagonistic behaviors: aggression and evasion. This is general. These factors regulate the mechanisms of interaction and self-organization. It is because of this diversity that we will be able to select, at a given moment, the most appropriate actions according to a global interest or a need for survival.

2) Without taking a course on the subject, we can quickly address a few points and characteristics that will make our system complex, that will organize it dynamically and from which collective intelligence will be expressed. As we already know, complex systems are looped networks whose feedback effects are amplified, inhibited or damped in a nonlinear way by individual behavior at the agent level, all of which are subject to structuring effects. When the actions are positive, we have a positive feedback loop. On the contrary, for the antagonistic action, the loop will be negative.

The whole network will therefore converge toward a new order or a state, which, let us specify, is almost never predictable!

3) As our decisional network is the one that governs our thinking, it is necessary to place oneself in a well-defined context. In our case, therefore, there are preconditions, predispositions and typical individual and affective behaviors that will favor the emergence of these properties. We can thus specify, by way of example, the following few antagonisms that are implemented at the level of ethics:

– Deceit and lies are tactics and manipulations specific to social species. These behaviors are opposed to the desire for sincerity and truth.

– Altruism. Very different from the previous attitude, altruism is a necessity in cooperative actions. It is opposed to the egoism that characterizes the fact of not cooperating. These behaviors are similar to those treated by theorists in gaming theory, based on systems in which one seeks to minimize a cost or maximize profit. The altruist will cooperate with his/her neighborhood without seeking, by definition, a significant benefit. These behaviors are very strongly found in the pure and hard financial systems, in which greed is a driving factor.

– Trust refers to a general attitude, encountered in multiple circumstances, where a person determines his or her behavior on the basis of a feeling or belief in others and then a reasoning or influence. Trust is the basis of all relationships. Research and then analysis of evidence can build confidence or, on the contrary, create a new feeling, mistrust. On the other hand, mistrust does not allow us to determine ourselves spontaneously because its basis is *a priori* negative.

– Empathy is the ability to put oneself in another's place and feel his/her feelings and emotions to better understand him/her. Antagonistically, egocentrism or apathy is an attitude or state of mind that is not susceptible to emotion toward others.

– Respect consists of acting, while keeping in mind that we are never alone; respect is the art of not disturbing a neighbor or not attempting his freedom of thought. As mentioned above, respect requires that we understand and share the values of a person or idea whose authority, awareness or value has an influence on our mind. Through respect, we can assess something or someone favorably, and on the other hand, through tolerance, we try to endure something or someone independently of the judgment we may have on it. On the contrary, the antonym term is contempt: we can hate or despise what we tolerate, accept it against the heart, and so on. Also, in some situations, we can be both contempting and intolerant.

This list of characteristics (sometimes called qualities and defects) is not exhaustive, but of key importance: combined with different notions such as culture, religion or education, etc. it will allow us to converge towards very specific, private and 'ethical' values: These are characteristics of our own consciousness.

4) The notion of synergy, which is a consequence of cooperative work, has also been discussed. Again, cooperation is not the only quality required. Its antagonistic term is competition. Sometimes, depending on the context, the survival of a species or a civilization will require it to be competitive,



sometimes it will be opportune to be cooperative. Sometimes it will be necessary to alternate these modes of operation. This is how I introduced [MAS 06b] the notions of cooperation and competition in the emergence of collective intelligence (European project PABADIS).

In this case, it is inappropriate to use the notion of synergy, which is linked to a one-off action, but of co-synergy that integrates a dynamic, as is done in nature!

In co-synergy, there is association, osmosis, federation or coalition of different antagonisms (pride and humility, selfishness and altruism), opposing actions (activation, inhibition, deactivation, as in biology) or even simultaneously different behaviors (cooperation and competitions).

All this means that, even at the level of professional ethics, we are faced with a complex system of thought: the decision-making process is torn between antagonistic interests, reasoning mechanisms and unpredictable evolutions. And it is normal and predictable that in our modern world we should do evil when we want to do good and *vice versa*. Everyone does their best, and the best proof of individual intelligence is to remain modest, to respect the one who has not been able to make the right decision and so on.

In a recent article, analyzing the causes of economic crises [MAS 10a, MAS 10b] and the drifts of recent decision-making systems, I focused on incompetence, ignorance and greed.

In general, the person in charge of ethics is not incompetent, and he/she is not greedy. On the other hand, we can ignore what has just been said because the underlying mechanisms complained about in management or decision failures, are relevant to the Science of Complexity and require an understanding of how an ecosystem can evolve and behave (we cannot know and anticipate everything!).

#### 13.2.2.2. *Implementation of the approach on Ethics*

These preliminaries, having been mentioned, explain that we must always take a certain number of precautions. It is necessary to consider the case of a company. This could be described as follows [PUJ 06]:

– On the part of the employee, the implementation of such an approach rests on frankness, honesty in the relationships between people and the

respect of commitments, among other things. This implies, for example, being able to discuss, exchange, have certain autonomy (trust) and so on.

– At the management level, all the moral values require the manager to be exemplary, in the sense of the “model” to be followed (leadership). At first glance, we think of professional ethics, which is declared in the form of honesty and integrity. Being an example of conduct also demands an ascendancy over others but in generosity and modesty, that is, without imposing or becoming a moralist.

– With co-workers, this implies being cooperative, altruistic and able to share the same moral values. It is a fundamental change of attitude that requires learning, therefore, time and listening.

– We will find similar benchmarks and moral values with other individuals with whom the employee is connected, for example, customers, external authorities and companies.

In terms of human resource management, we hear of infernal cadences, intellectual or sexual harassment: in this context, the notion of ethics is unavoidable and makes it possible to moralize human relations, to position oneself in relation to Outside in order to either validate or not such assertions, to respect others and to better frame the management methods.

Such references and benchmarks, when we were at IBM in the 1980s, constituted what were called “Best Practices”: they had to be applied according to a simple principle called “Best Judgment”. Behind the notion of professional ethics, there is therefore much subjectivity, but also the adhesion of all.

However, this approach, and therefore exemplarity, must come from the highest level of the hierarchy because the one who is the “leader” is the one who possesses the moral function. This exemplar of the leader will enable him/her to gain his/her authority every day by the esteem, respect for others, and the trust that will be accorded by his/her collaborators. It is a *sine qua non*-condition for the success of an ethical project. Indeed, any disadvantage at any given time in such an approach would have disastrous repercussions on employee confidence.

On the other hand, to attract respect, the manager, in his/her moral approach, must demonstrate competence. This is a very important point, because it must be accepted by his/her team. The value criteria here are not those of a financier or manager. We can refer to what is known and specific to Western culture (IBM, TOTAL, Microsoft, EMA, for example): we were

surprised because in a US factory, responsible for developing and launching very large computers, managers were able to understand and solve very precise and complicated technical problems.

This is not always the case in France where “generalist” engineers or so-called business managers, sometimes have a superficial tincture in many areas without mastering the profound aspects: are they credible, well accepted and respected by their team? Of course, the approach in France is not the same as that of the United States, where team spirit and the notion of network do not exercise in the same way. Also, transdisciplinarity is of key importance since newly encountered problems, depending on the circumstances, have no solution and require innovative and transdisciplinary approaches.

All these considerations lead us to ask ourselves the following questions:

– Can professional ethics, under these conditions, be easily appropriated by a team or should it be imposed?

– We are in a multidimensional world. Professional ethics requires a multidisciplinary approach because we are in a world perceived in an increasingly holistic way. It is thus necessary not only to cover and possess a minimum level of skill in sectors such as the humanities (sociology, history, philosophy) and the sciences (psychology, biology) but also to have notions of organization of the company, Economics and law (legal framework of ethics) without forgetting the technological sciences or engineering. Hence the question: how should the training and deployment of Professional Ethics be organized? This point will be seen later on.

### **13.2.3. *Management by values: advantages and limitations***

Marvin Bower [BOW 97] noted that the companies that succeed best in the ethical approach are those that codified and formalized their values. This approach allows employees to have a “guide” to choose what behavior to adopt in relation to a delicate situation. However, an ethical charter must not be a mere communication object but a real management tool.

In order to clarify, understand and appropriate the rules, participatory development of ethical codes is a means of involving the employee at the

heart of the company's ethical approach. Indeed, if the employee has not been consulted, he/she will receive this approach with suspicion or indifference.

On the other hand, in view of what has been said, it is always difficult to formalize an ethical code, knowing that one is dealing with the human qualities of an individual, his/her behavior, personal conscience and sensitivity in its entirety and culture. Therefore, how can we take this fact into account?

The goal, in fact, is to describe an 'ideal' vision of the business, to reach a state of mind associated with a morality, and to make resolutions to ensure the success of ethics. As we know, we are in a multidimensional, pluridisciplinary and subjective society. It is therefore possible to define only meta-rules (describing in a rather exhaustive way the limits not to be crossed and the non-tolerated attitudes). On the application level, there will be a constant call for consensus and autonomy of each.

For newcomers, this implies preliminary training, carried out by the company (during the induction of the individual) and an adaptation on both sides. Unlike technical specifications, for example, which are not "questionable" at the implementation level (except in exceptional cases).

At the implementation level, the difficulty arises from the fact that the managers' concerns may be more economic, legal and strategic, while the opinions of employees make it possible to better understand the reality of sensitive situations. Thus, the Business Ethics Code of Conduct (BECC), or ethical charter, is the "cornerstone of ethical management" and must be a commitment signed by all.

NOTE.— A number of enterprises value whistleblowing. In recent years, the system of ethical alert has developed: a system of feedback, confidential and independent of the hierarchy, which allows an employee to express himself and to raise cases that appear abnormal and which deserve specific discussion and resolution.

However, beyond the existing constraints, such a system has advantages but faces legal, cultural and moral difficulties:

– on the one hand, it improves individual and collective behavior and a tendency to conform to the ethical charter;

– it is a system of self-regulation, comparable to a safety valve, which allows people to express themselves and to raise discomforts;

– on the other hand, it also represents a means for employees to exercise their right of expression and to make their deep sensitivity known. The risk is the politicization of such debates;

– the introduction of such a system can prevent the company from “outsourcing” problems that always have a disastrous effect, either for employees or for the company, so for the whole of society!

In France, the question of freedoms remains paramount, and the CNIL limits this system (based on either informing, delation or denunciation), in order to avoid an “organized system of professional denunciation”. This relates, in particular, to the accounting and financial field and imposes a number of prerequisites and conditions.

### **13.3. Ethics in the United States: the emergence of Business Ethics (BE)**

When considering how Business Ethics was introduced in US companies, two stages can be considered:

– The 1960s–1970s: In a climate of counter-culture, the company recognizes social responsibility. There is a strong involvement of society in family affairs, not to say paternalism. It is considered that there is an implicit contract between the undertaking and the company, whereby the undertaking has obligations in relation to the company, as the company otherwise has a duty to control it.

– The 1970s–1980s: In this less ideological second stage, the community aspect and the involvement of the employees are developing. We advocate self-regulation of the private sector. We recognize the merits of profit, but in the face of deregulation, we advance three arguments:

- ethics constitutes the identity of companies;
- it is a means of arbitration;
- it makes it possible to avoid regulation by the State.

There are several positions and interpretations of these facts:

– The business world is sometimes considered amoral: the first concern of the “boss” is efficiency. The notion of performance did not come until the late 1970s, with the emergence of notions such as the TQM (Total Quality Management) and “cost of non-quality” and the transposition of industrial management methods in Japan. Management must therefore remain outside any problem of morality. Awareness is there, but ethics is still only considered a fashion. There are thus two different modes in the appearance of this approach.

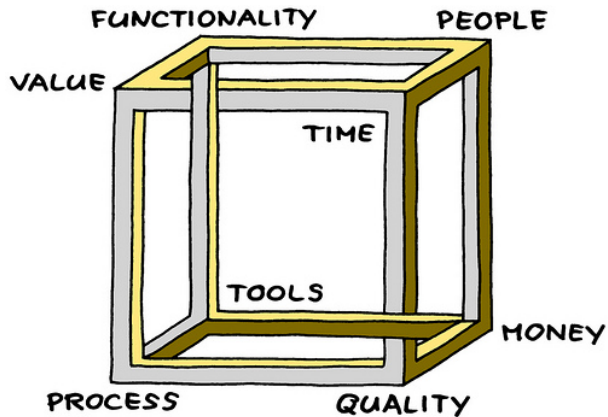
This thesis was already supported by authors from the 18th and 19th Centuries.

Some economists see the economy as a zero-sum game: if there are winners, there are necessarily losers. However, it can be considered as a non-zero sum game if there is an additional global interest or added value. In Europe, we are talking about job creation, wealth and activities. This is an approach that is also evident in some public administrations. This has become a leitmotif in our region of Languedoc Roussillon, Southern France. In the United States, however, the concept of value is reduced to “net income” growth. We will not dwell on the founding principles justified at the time of such an approach, but we must remember that this must involve the pooling of efforts and the motivation of employees in the production lines. It is then that the notion of ethics intervenes and that certain specialists in management think of its positive contributions.

This movement was reinforced by the deregulation policy undertaken by Reagan, and some authors thought that it was thus possible to strengthen the means of self-regulation and improve the image of companies.

The socioeconomic movement (rather marginal in France) rejects the reductive logic of homo economicus and considers that other dimensions, such as morality, must be taken into account in scientific and economic analysis. This is a failure: the recent sub-prime crisis has shown how “greed” has become an essential factor of crisis and how economic leaders have not been able to assimilate the potential for progress brought by new information (comment: yes for communication and no for information).

In fact, we are faced with a multidimensional problem, where evolution must fit the following environmental constraints:



Source: Management 3.0 (Jurgen Appelo)

Each node of this hypercube is related to specific means of implementation. For instance: Tools → technologies, People → sociology, etc.

EXPLANATION 1.– More specifically, concerning the node called ‘people’ we can say:

Thanks in part to the involvement of sociologists, there is a managerial mode that pushes, particularly in France, the renewed adoption of certain tools such as participative management, total quality, coaching, team work (in the 1970s), quality circles, team building, corporate culture, leadership, ethics in business and so on. All of these steps are aimed at improving the quality and performance of a product or system. Man is included in these methodologies as a “transforming agent” but not as the ultimate recipient of the service. What about his identity, his role and know-how?

EXPLANATION 2.– With the emergence of networks of skills and networks of networked enterprises, some argue that there is no progress in the

economy without ethics: beyond the legal requirements, trust is necessary in the relations of “business”. This cannot be developed without defining *a priori* modes of functioning and exchanges based on ethics.

But when they are drowned in an opaque and uncontrollable mode, the question arises of the governance of the whole, unpredictable deviations, abuses and possible excesses of each one: one cannot enact laws to regulate this. It is self-regulation, which is why it takes precedence over the role of each individual through ethical behavior.

EXPLANATION 3.— The Internet is an effective way of managing and exchanging, but it has led to changes. For example, while the first instruments of management, or the commitments of one another, were based on ethical rules and relationships of trust, the “Bill of Exchange”, which is now widespread, is not based on respect for speech (the sanction, formerly, was the exclusion of the circle of affairs): these are steps that are still valid in agriculture! (But which are unthinkable in our often depersonalized world of business where trust is based on what is written in a formal contract). Thus, today, the respect of the given word is less important because of the existence of a legal arsenal. This is reflected in the development of a more or less artificial legal activity based on the complexity of business, with a very erased role in ethics.

NOTES.—

– To return to the United States, Business Ethics has become a substitute for regulation (already decreased by Reagan). Most business leaders see this as a new form of economic and social regulation.

– The media in France are in the habit of highlighting the waves of mergers and acquisitions (involving unemployment) because they are “(...) motivated by purely speculative reasons, according to the logic of Anglo-Saxon, turned toward the interest of the shareholders and so on”. It should be noted that we are all capitalist countries, that human nature is the same regardless of the country in which we find ourselves, and at all levels of society! American capitalism, in doing so, has delayed our decline. We take advantage of it and we must avoid playing the hypocrites.



– Some companies lay off staff, sometimes when they are not in bad shape, to improve their profitability and shareholders' income. However, if their profitability is not sufficient, it must be remembered that their activities can be relocated elsewhere. This is a problem of the market economy and international competition, and has been in effect since the pre-Sumerian civilization. Nature has always optimized its costs and we, as consumers, do not hesitate to buy products manufactured in developing countries at the best prices where young minors are not subjected to ethical behavior!

It is the same for the public: customers do not hesitate to buy products manufactured in developing countries where workers, and sometimes even minors, are subject to questionable and unethical working conditions.

This holds true for large department stores: whatever the origin and mode of production of finished goods, they progressively switch their supplier strategy. What matters most for the general public is to acquire goods and produce at the lowest possible cost.

### **13.4. Ethics in Europe: a professional approach**

Business Ethics was mostly introduced in Great Britain, more timidly in Spain, Belgium and France. In France, it was first applied in the subsidiaries of American companies, then in large French groups like the Lyonnaise des Eaux, the French Car Industry, etc.

The movement has been shaped by the existence of symposia on ethics organized by the Young Leaders' Center, courses in business schools and so on.

It is true that in this period, French society is failing with innovative and motivating projects (what the Americans call "inspiring projects"). Some multinationals have initiated such projects in order to galvanize and encourage the emulation of their troops, but in the world we know, politicians, like economists or industrialists, are sometimes out of imagination. This is due to their educational background and cultural heritage.

On the other hand, consultants (more than 35,000 advisors in France), are always looking to explore new ways of improvement and development for these organizations and companies: in most cases, innovation is involved. Again, innovation mainly addresses products, rather than processes; during my stay in EMA (Ecole des Mines – Alès) I was strongly involved in the entrepreneurship program, and I could observe that this move, in the

Occitanie (the new administrative ‘region’ in the South of France), was largely impacting start-ups: it must be recognized that many new approaches and support systems are proposed or provided within the framework of business incubators and nurseries, etc. The same approach concerns agriculture. In our wineries, the ministry of Agriculture and Forests, financial support is mainly targeted toward production investments, and financial or technical assistance. Software applications are excluded. A key word is ‘sustainability’. Now, ethics, which is often cited in these periods of deviance and economic transitions, is part of it, but is just a starting point. Moreover, public opinion has been gradually acquired not only for its innovative aspect but also to re-launch the economic action in failure of projects.

### **13.4.1. Ethics in France**

#### **13.4.1.1. Causes of interest in Ethics**

– The rehabilitation of the company implemented by the socialists after 1982. One then switches from societal relations (tied in the 1930s and the 1940s to an interest, a vision influenced by Marxist ideology, National strategies justified at a given time) to more and more community-based relations (based on the sharing of assets and value).

- The rise of the standard of living during the Glorious 30 (1945–1975), but above all by a disruption of wage policies, which, even if they respected the rules of ethics, were shocking in terms of ethics.

– The disappearance of large enterprises (iron and steel, textiles and soon the agonizing restructuring of certain agricultural sectors), which lead to proposals for questionable solutions for the disenfranchised by unreliable political scenarios.

– The loss of influence of trade unions, and the rise of corporatism and sectoral actions that have not been mastered, or selfishness and acquired benefits.

– The emergence of managerial practices such as corporate culture and simple mimicry (as in the United States, but 5–10 years later) due to changes in business models with the WTO, globalization, the Internet and so on.

All these mutations have not been digested by our society. It cannot keep up with the rapid pace of change, and it necessarily results in adaptation problems, deviations, drifts, abuses and so on. The need is felt by all to set up tools of regulation and control.

– People are often reassured when they are assisted, and this approach has advantages in terms of psychological security. On the other hand, as everyone knows, nothing is easier than bypassing a law or regulation, sometimes like a game. Similarly, what hinders one liberates others and one also knows that the misfortune of some is always the happiness of others. It is the same principle that applies to the economy and when a crisis strikes a particular country, it reflects a change of dominance and other countries benefit from that weakness.

For more equity and efficiency, we saw [MAS 10a, MAS 10b] that the solution, in the most advanced countries, resided in the mobilization of individuals.

– The aim here is not to make a revolution because there is a discontinuity rupture [THO 82], which, by its very nature, leads to nothing interesting on a short term horizon: it is like a random event.

– The objective, as can be seen on the Internet, is to raise behavior (corporate governance is gradually evolving from top-down, to bottom-up). Individual and positive behaviors are therefore solicited, and it is in this that ethics is so important! Indeed, it is the ethics that regulates personal consciousness and that can help to print, or to emerge, a new order. Beware, it is not a matter of being revolutionary but realistic: it is the complementarity of two approaches that helps to promote the climate and the progress of our society.

In France, there is a growing interest in professional ethics. However, many people and consultants adapt it to their menu and/or have not grasped the deep sense of ethics: they respond, in this way, to a mercantile approach.

On the other hand, many companies, according to their maturity and level of culture, try to integrate it progressively into their strategies and operations. Comparatively, in the United States, 75% of companies have a code of good conduct, and there is a true business ethics industry with courses, consultancy, management research, management and organization.

#### **13.4.1.2. Corporate Social Responsibility and ETHICS in Society**

In France, the concept of ethics is often associated with the notions of vulnerability. It includes the social risks and the misfortunes of living beings, people excluded from the society, but also the relationship with animals, plants, and the environment. We are therefore neither in the ethics of responsibility or conviction, but in the naturalistic ethics as defined before.

Also, we will not talk here about ethics in health:

- the hospital with notions of new treatments (and associated dangers);
- doping and drugs which are an artificial means of increasing our performance, with the dangers incurred;
- assisted human procreation;
- the media and the role of fiction movies, including sex, violence, murders, etc.;
- prisons and jails, with the problem of sentencing, to be applied or not;
- approaches related to civil disobedience that correspond to our new forms of societies.

Concerning Business Ethics, we will just mention the role of governments or elected politicians: they are responsible for the more or less honest or moral way in which means, values, resources and debates can be mobilized. They also have a great responsibility when justifying actions, for political reasons or under cover of personal interests (immoral dealings of insiders, personal enrichment, etc.) So it is a real debate that no one wants to face. This is why we will only address some BE approaches either in Industry or Administration.

#### **13.4.1.3. *Social responsibility in the enterprises***

In this paragraph, we do not deal with ethics but with Corporate Social Responsibility (CSR). This point is interesting because it measures the difference in culture between countries, where individual notions are emphasized, while others are emphasized with regard to social aspects.

New themes are often addressed regularly in politics and in the media: many examples include corruption, insider trading and embezzlement of social goods. These facts, of course, are reprehensible and must be repressed. In many companies, executives say that the way of doing things is relevant to CSR and not Ethics. But the underlying mechanisms remain the same: it is through texts of laws, sometimes complicated, that we will search, to detect any economic, political, social or personal failing of an individual person or organism.

We are therefore in the domain of morality!

But, is there ethics or CSR that applies?

To clarify this point of discussion, we will try to compare the main characteristics of both approaches. To keep it simple we will recall the following:

Whatever the lofty goals of these approaches, we can say that:

– Business Ethics (BE) is related to individual action and decision, which can be assessed as being wrong or right, compared to a reference or values. These refer to moral principles and consciousness (of what is right or wrong) whereas CSR refers to the organizations' and companies' obligation to all stakeholders and not just shareholders.

– Corporate Social Responsibility (CSR) is related to the application of tangible corporate practices while BE is more related to deep mental values driving business decisions.

When CSR or Ethics are undermined and somebody is caught, are we in the domain of ethics?

Are we in the field of ethics? No, because the intentions of “justiciars” or whistleblowers are not always ethical: this is not linked to an individual's deep conviction, to his/her personal conscience, but to a tactical need (in the sense of Military tactics) where a partner seeks to gain an advantage (need to destabilize, revenge, jealousy, etc.). In our society, the concept of “prey–predator system” is very vivid and still corresponds to primary behavioral eras (need for survival, sharing of goods and resources, and domination of populations).

On the other hand, there are few actions in favor of ethics: in the press, radio or television, how often do we put forward the intrinsic and positive qualities of an individual? How often do we exemplify personal behavior? It is certainly easier to criticize, denigrate or harass a person than to praise honest behavior or to put forward acts of probity.

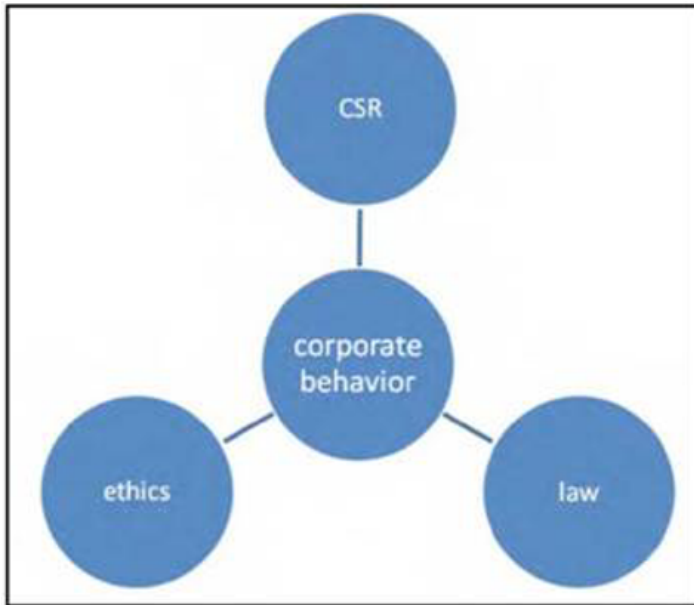
When a crime is committed: one tends to forget the victim and one tries to explain, if not to excuse, the behavior of the aggressor.

Would not that be part of the “*panem and circenses*” of the Romans?

Laxity and distorted views of our society can conduct everybody to a dead-end.

To summarize what has been written, the corporate behavior of a company is the result of three complementary factors:

- Laws relevant to public rules, morality and deontology.
- CSR: Corporate Social Responsibility.
- Ethics.



Although we do not sweep before our own door, it does not prevent us from giving lessons to our neighbors, sometimes under the pretext of promoting human rights. Hereafter are some examples:

- the attitude of certain countries or partners that are not politically correct is often raised and may lead to their boycott. Looking from an exterior perspective, is the position of France irreproachable?

- companies that engage in social discrimination are everywhere. However, where are we? A chair on the development economy has just been awarded to the Sorbonne, but what about the “inclusive society”? We talk about it in Haiti or in the United States but not in France, where we limit ourselves to “social cohesion”.

– child labor: we talk about it, condemn and develop “ethical trade”. This is positive, because respect for an individual is part of ethics, but as a consumer, one hesitates to buy more expensive goods, knowing that they may be, at times, over-priced. When will the additional cost of such products be tolerated?

– everyone loves the protection of the consumer, shareholders and animals: it reassures, but it also takes responsibility. We put in place “ethical shields”:

- ethical charters: by whom and for what purpose?

- the proliferation of legal proceedings for “ethical reasons”: is it not a question of morality?

- and so on.

To summarize, ethics based on notions of good and evil will struggle to impose itself in France if we do not change our approaches: the permanent division of society into two blocks, in which the “left” is the bearer of the truth of generosity and of “good”, whereas the “capitalist” right exploits man and represents “evil”, poses a problem. While ethics is linked to an individual’s behavior, and as long as good or evil is associated with a political affiliation or a group of thought, it will be difficult to evolve.

### **13.5. Ethics in Japan: a holistic approach**

This country is characterized by a community ethic that can be attributed to a cultural heritage. Indeed, in Japanese culture, it is marked by three “currents”:

– Confucianism: based on the practice of four virtues in particular (charity, loyalty, dedication to parents and family, and politeness). Moreover, there was once a fairly rigid social hierarchy whose influence is still present today (devotion to the nation, paternalism, etc.).

– Zen Buddhism which marks professional ethics at work, which is not seen as a chore but as a sacred act.

– Shintoism: Japan’s oldest religion (kind of animism), in which there is an emotional relationship with nature. “The Japanese do not tend to act according to universal principles but in relation to an emotion”. The look and presence of others is important.

Shintoism is essentially polytheistic. The major concept of Shintoism is the sacred character of nature. The profound respect that flows from it defines the place of man in the universe: to be an element of the great whole. Thus, a river, a star, a charismatic character, a simple stone or even abstract notions such as fertility can be considered divinities.

The ethics of a Japanese company is deeply coherent with this culture. For example, Japanese are more likely to follow a strong idea than to follow their own individual path.

The charter (ethical formalization) can create a sense of belonging to the group. In this context, companies try to implement initiatives that transcend the individual and the company (work for the Japanese nation). The following are examples of values contained in these charters:

- dedication;
- self-fulfillment;
- social harmony;
- trust;
- happiness;
- work for the nation;
- the community.

The charter of the company MATSUSHITA:

- contribution to society;
- fairness and honesty;
- cooperation and team spirit;
- unremitting effort to improve;
- courtesy and humility;
- adaptation;
- gratitude.



### **13.5.1. Specific problems of ethics in Japanese society**

- Discrimination: tradition favors men.
- Interdependence on the group: reflected in the difficulty of changing the company, the reluctance to give its opinion with regard to ethics (obedience even in cases of disagreement).
- Personal withdrawal.

The rules of conduct are specific to a Community or company. They include for instance: continuing education and skill development, training on tools such as quality circles, Kanban or business plans. These practices are justified by the selection of new employees, during their hiring in a company.

## **13.6. Ethics in Western industry: some examples and applications**

The objective of this section is not to review typical approaches to the way in which ethics is implemented and practiced in organizations and firms, but simply to illustrate how it can be addressed in the industrial world. For that purpose, we have analyzed some documents and reports issued from Veolia, Yves Rocher, Danone, Bolloré Total and IBM. So it's a non-exhaustive approach and everyone will want to dig deeper into what is being done in other companies and make a more precise synthesis. What follows is just an example of what's happening in Veolia and IBM-EMEA.

### **13.6.1. Veolia: implementation of a program on ethics**

The “Ethics, Conviction and Responsibility” program of Veolia Environnement [VEO 08] imposes itself on all its employees. To accompany it, several approaches and procedures have been developed:

1) This is, as can be seen below, a commitment made by the Group's General Management, together with the elaboration of a “*charter d'entreprise*” (a synthetic document expressing the values of the company and the recommended behaviors).

## Notre entreprise s'engage

**E**n se développant en France et à l'international, Veolia Environnement s'attache à favoriser les valeurs et les principes, auquels l'ensemble de nos collaborateurs adhèrent, partout où nous agissons.

Ce Programme, intitulé "Éthique, Conviction et Responsabilité", guide au quotidien le comportement de nos 320 000 collaborateurs à travers près de 68 pays dans le monde.

Quel que soit le contexte géographique, notre métier doit s'exercer en respectant les normes nationales et les recommandations des organisations internationales, notamment en ce qui concerne le respect des principes fondamentaux, la prise en compte des diversités culturelles et la préservation de l'environnement.

Exercer notre activité en professionnels, respecter nos clients, assumer nos responsabilités, c'est tout simplement, faire correctement notre métier.



Henri Proglia  
Président-Directeur général  
de Veolia Environnement

2) The implementation of the process is therefore carried out according to an “ethics charter”, which is a document comprising basic principles and an organization. A summary is shown in the table opposite.

For example, *Veolia Environnement* has adopted a Financial Code of Ethics, which contains rules of good conduct applicable to key executives responsible for the validation of financial and accounting information and which seeks Specific obligations of integrity, diligence and oversight of financial disclosure.

Similarly, an Ethics Committee was set up in the early 2004 and its procedures are set out in internal regulation. It comprises three to five members and can be referred by any employee, or refer itself to any matter related to the ethics of *Veolia Environnement*. It is bound by strict obligations of independence and confidentiality. Each year, the Ethics Committee prepares a report on the respect of fundamental values by *Veolia Environnement* companies, on the difficulties encountered and the improvements that are desirable. The names and contact details of the members of the Ethics Committee are available on the *Veolia Environnement* intranet.

In this example, we see that the notions of integrity and image are put forward, in order to be able to contribute, in a civilized way, to the sustainable development of society.

Principles	Business actions and obligations
<b>Respect of the law</b>	1. Permanent duty of vigilance. 2. Following of a normative evolution and adaptation of techniques.
<b>Loyalty</b>	1. Solidarity between employees. 2. Discretion and confidentiality in exchanges of information. 3. Appropriate management of situations which could present a conflict of interest.
<b>Social responsibility</b>	1. Respect of international and national standards, in particular the International Labour Organization. 2. Training, protection and promotion of contributors, notably thanks to the <i>Campus Veolia Environnement</i> . 3. Implementation of actions aiming to improve the lives of nearby populations. 4. Publication of documents to bear witness to these actions: eg. social report, contribution of social initiatives.
<b>Risk management</b>	1. Preservation of health and safety at work. 2. Identification/limitation of industrial and environmental risks on sites. 3. Increased surveillance of health facilities and work towards R&D. 4. Management of geographic risks involving operations and travel. 5. Establishment of a financial code of ethics and rules of conduct for lawyers.
<b>Information and business governance</b>	1. Clarity and precision of published information under the control of the communications committee. 2. Conformity with the best standards in place concerning business governance (independent members on the board of directors and establishment of various committees).
<b>Commitments with regards to sustainable development</b>	1. Adherence to principles of the United Nations Global Pact. 2. Adoption of a charter for sustainable development. 3. Voluntary publication of an annual report on sustainable development.
<b>The organization</b>	<b>Means of implementation</b>
<b>Scope of application of the Programme</b>	1. Diffusion and application of the programme in all of the companies controlled by <i>Veolia Environnement</i> . 2. Possibility for the divisions to reinforce the programme and to adapt to it a local context.
<b>Procedures</b>	1. Ethics committee: composed of independent members which any employee can call upon in full confidentiality. 2. Internal audit which assures respect for the financial procedures of the group as a whole. 3. Risk committee who implement safety programmes within the divisions. 4. Financial communication who controls the publication of information.

### 13.6.2. IBM: Corporate Social Responsibility and Ethics

The so-called “social” responsibility of IBM [IBM 09] is in line with the approach taken by companies to conduct their activities and to have a positive overall impact on society through their economic, environmental and socially responsible actions.

CSR motivates many business leaders, who see it as a new potential for competitive differentiation and development of their business. Companies seek to better value the constraints and opportunities of the company to differentiate their brands, open up new markets and attract and retain the best collaborators. In this perspective, companies are working to develop new skills and responsible practices. These may include initiatives to increase transparency in the organization and to better respond to the demands of different communities, particularly customers.

This CSR is operated independently to Ethics which is mainly managed by the HRD (Human Resources Department). CSR is applied according to three main principles:

#### ***13.6.2.1. Operations and logistics management***

In the IT Centers, the “green” trend aims to ensure the best possible energy efficiency and reduce carbon emissions. The IT function must contribute to the development, conduct and implementation of these initiatives. They will have to equip themselves with technologies that can manage the risks associated with their supply chains, the traceability, the reliability of the data entrusted to them as well as ensure that their suppliers perfectly apply the agreed ethical and protection practices concerning the environment.

#### ***13.6.2.2. Communication: advantages and transparency***

A new generation of consumers, from the Internet, is on the lookout for information on the practices of the companies from which they purchase products and services online. They require information on the safety, on the components of the products or on the logistics approaches and seek to know the impact of the mode of manufacture of the products on the environment.

They are also interested in operational practices, such as outsourcing, policies and personnel safety. In addition, these eco-people will probably be future high potential and skilled employees, therefore relationships with them have to be carefully managed. Indeed, such people are motivated by companies being committed and responsible towards sustainability, and their influence is big.

Investors themselves take into account CSR criteria in assessing the attractiveness of an enterprise and the government is putting in place regulations in this area. Suppliers and partners analyze logistics chains to ensure that their mutual commitments are met.

It is therefore a question of going beyond conformity to encourage growth and differentiation.

The aim is to see the opportunity to lead many changes within the company and to contribute to more efficient supply chains. They will have to anticipate the ecological impact of the infrastructure, they have a direct responsibility to prepare for the reduction and control of energy consumption and rationalize costs while ensuring the necessary growth of their activities.

### ***13.6.2.3. Organization: how to evolve from a rational concern to a full involvement***

Another key aspect of CSR's mission is to establish collaborative platforms between the company's various stakeholders, its staff and its customers. Beyond the development of awareness and trust among stakeholder groups, collaboration can be an essential basis for creating and developing innovative policies and processes as well as social and environmental responsibility.

In addition, collaborative tools are available to encourage team mobility, minimize travel and reduce the company's impact on the environment, while boosting the capacity for innovation and adaptation. All the application fields are involved with these concerns.

## **13.7. Conclusion**

Ethics and Corporate social responsibility are a real lever for growth. IBM is therefore in a position to play a prominent role in companies thanks to its in-house CSR skills, and by matching IT and business strategies to each other, through platforms and business processes, necessary to facilitate their approach.

Business Ethics in the company is a necessity for all, indeed, a failure in the company puts everyone in danger:

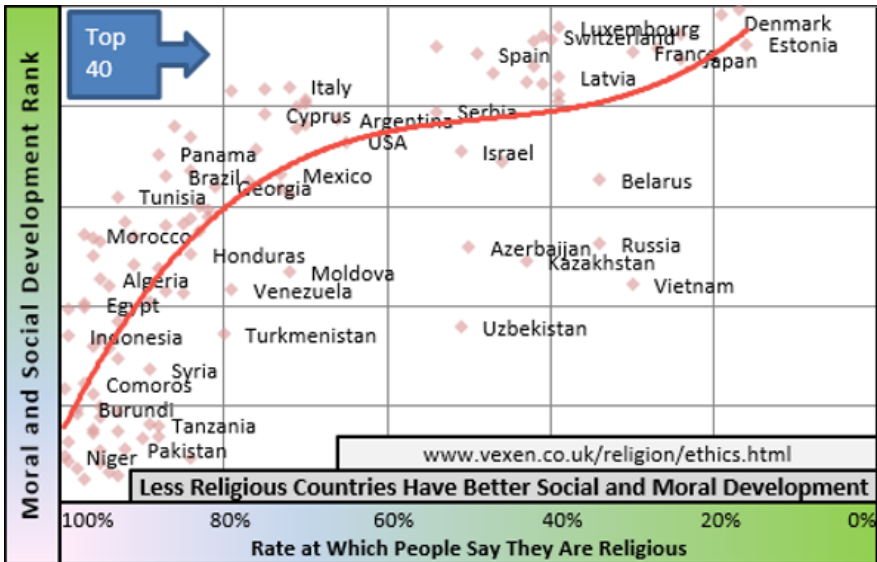
- the company and its executives are exposed to prosecution;
- the image of the company suffers with regards to customers and partners;
- losing markets jeopardizes jobs;
- shareholders lose their investment;
- stakeholders will do business with other companies.

Ethics and security must be structured and demonstrated. To do nothing is to be guilty:

- fighting against corruption, fraud, harassment and discrimination is a legal obligation;

- alerting and whistleblowing platforms are shields that must be protected;
- all companies are concerned, from SMEs to large groups;
- each at its level must be mobilized.

To compare the BE development plans of several countries, we can refer to the following graph showing the cultural and secular impacts related to the implementation of BECC.



**Figure 13.2. Human Rights and secular Morals.** Source: *Ethics without Religion or Faith*. Graph by Vexen Crabtree – 2014. [http://www.humanreligions.info/secular\\_morals.html](http://www.humanreligions.info/secular_morals.html)

We have to keep in mind that ethics has a maximum value as soon there is no faith in truth, no social values, no laws or religious references. The above graph summarizes this fact which we widely developed in the book. As an example, in the left side of the graph, the countries where religion is highly implemented, do not need ethics. In contrast, ethics development will be more useful in countries located on the right side of the graph.

In this same part of the graph, Corporate Social Responsibility, as well as professional ethics, can be found at all levels of the company: manufacturing operations, economic intelligence and social engineering. As is quoted here, economic intelligence is that the “truth” is not always the characteristic of the company and that the solutions are sometimes transposed from the outside. To obtain information, it is not a question of spying, but of making legal means: meetings between companies, congresses, consulting and specialized conferences to draw on external experiences and adapt to one’s own environment. In the opinion of all professionals, and experts in a given job, economic intelligence is above all a kind of behavior and a way of being. It is not easy to acquire its specific skills, which one has more or less in itself, in particular with regard to the practices of social engineering they already possess. This particular practice calls for a personal capacity, which makes it possible to obtain information that is difficult to access, to synthesize and to interpret it positively in the interest of the enterprise.

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# Conclusion

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## Main conclusions

### *Is this book on Business Ethics consistent?*

Consistency in Information Systems is based on several factors:

- the information is unique and readable;
- the information is pertinent and complete (conforms to the ‘truth’);
- there is no redundancy;
- there is no contradiction.

With regard to the aforementioned criteria, the answer is clear: NO! This book is not consistent enough, and we are going to develop this thought for explanation purposes.

For technical reasons, the initial book on Business ethics has been split into two parts:

- Ethics in Social Networking and Business – Volume 1: Theory, Practice and Current Recommendations.
- Ethics in Social Networking and Business – Volume 2: The Future and Changing Paradigms.



## ***Volume 1: Theory, Practice and Current Recommendations***

This present book (Volume 1), is a mainly conventional approach of ethics, as developed by the ancient Greeks: due to our rationality, we keep looking for items, facts, approaches, causes and implementations which govern the design and governance of a new business world. If we look at the content of this first part of the book dedicated to business ethics, we could say that:

1) This volume is a current overview of what is happening in the working world. Theory, Practice and Current Recommendations are developed through examples issued from the Rotary or industrial companies.

Here we spoke primarily of our experience in ethics and business ethics. We have described some notions of complexity, evolution overtime of life, and we can better understand why and how ethics is becoming essential to the sustainability of our systems. Also, we have seen how business ethics can be implemented in current enterprises according to a corporate and societal culture, the geographical context, etc. Thus, in this book, we are both in the present and the short term future.

2) Business Ethics is linked to system Complexity and Evolution theory. In our mundane context, business ethics expresses the fact that responsible people and executives are afraid of losing control of complex phenomenon. It is associated with the need to preserve a situation in the face of apparently irreversible changes. This is a reason why 'integration' of Business ethics is becoming so important.

Also, concerning the intrinsic system complexity, and the growing complexity of nature: we stated in this book that simplexification was necessary to manage, monitor and control complex systems. I will add that Simplexification enables us to understand complexity. Indeed, as often said in the Advanced Technology Group, within IBM EMEA, the simple modeling of a complex system is able to generate 50% of the solution about a given problem; while re-engineering provides the remaining part of the solution: everything starts with an organization, everything ends with another.

3) In this book, some people will find that a lot of things are wrong. Maybe, but a lot of it will be useful: it is a positive statement, since the whole content is not just a survey and review of conventional and various integrated processes.

At last, concerning learning principles and the need for diversity, developed in the book, we will recall two facts:

- it is only the one who is doing nothing that is never wrong;
- in a complex situation, we do not learn efficiently if we are just trying not to make any errors.

## ***Volume 2: The Future and Changing Paradigms***

In Volume 2, the world is changing. The future will again impose a paradigm shift. This is mainly related to the new context, with the impact of new technologies and societal evolution. Thus we will talk about the extension of concepts related to the dissemination and intrusive impact of the advanced sciences.

Indeed, ethics (business ethics) will now manifest itself along several directions:

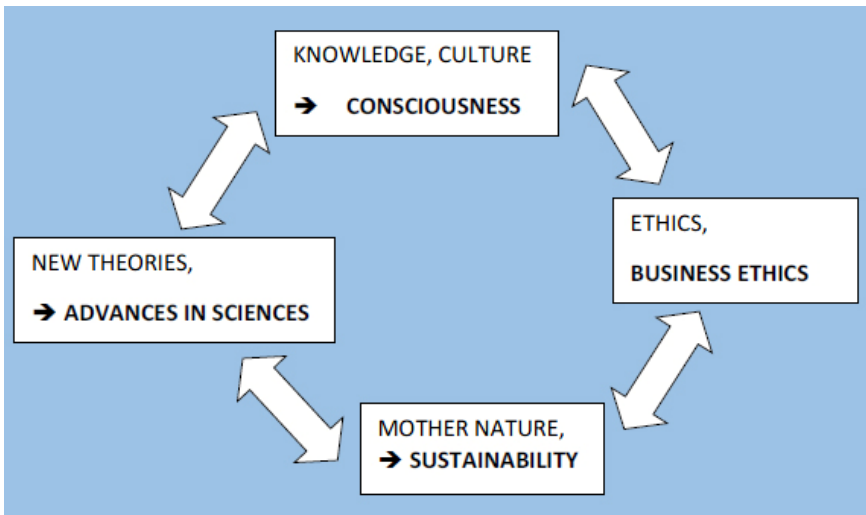
1) One is in the pervasive development of Artificial Intelligence (the role and influence of humankind is both enlarged and subject to transhumanism, but all of this can lead to his loss),

2) Uberization of business (the economy of sharing) with the development of new ways of working (cooperation, collaboration, etc.), and new ways of consuming products and services.

3) Social networking (that is based on the emergence of new patterns and orders, and the development of new business models of which we suffer without being able to control them), one consequence of this loss of control will lead to whistleblowing.

4) At last, in the same way, the world becomes spiritual: relations to virtue (and religions) raise new problems concerning the evolution and adaptation of business ethics.

The development of new concepts of Ethics are the result of several steps and feedback loops in an evolutive process. In the case of impacts and influences of Advances and progress in our society, we could think about the following graph.



In this above graph (Pierre Massotte), regulation does not come from legal or moral laws, but from our ‘mother nature’ which is guided by a whole sustainability relevant to the code types that underpin the evolution in nature [MAS 15a].

In Volume 2, we will draw our inspiration from another world. It is these kinds of perspectives, concepts, advice and recommendations that we will detail and integrate in order to develop a more global and realistic paradigm leading to “whole ethics”.

So, the “whole ethics” concept will become a more consistent concept.

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