Part I

Basic concepts and development
The word ‘risk’ is widely used today to refer to a multiplicity of phenomena, from the very materials from which financial institutions or insurances make their profits to the various dangers that can affect any sector of our lives (health, environment, unemployment, crimes). ‘Risk’ has become a category of our experience, a way we perceive and understand our lives and the world around us. But this category – and the very experience it conveys – is deeply historical and specific. Some scholars, such as Beck (1992), have used the terms ‘dangers’, ‘risks’ or ‘threats’ interchangeably, whilst others such as Giddens (1999), Luhmann (1993) and contributors to ‘governmentality studies’ (see Chapter 9) have rightly stressed that ‘risk’ should be distinguished as a specific way of understanding and governing uncertain events. As Ewald states in relation to risk and insurance:

"the term designates neither an event nor a general kind of event occurring in reality (the unfortunate kind), but a specific mode of treatment of certain events capable of happening to a group of individuals – or, more exactly, to values and capitals possessed [...] by a collectivity of individuals: that is to say, a population. Nothing is a risk in itself; there is no risk in reality. But on the other hand anything *can* be a risk; it all depends on how one [...] considers the event. As Kant might have put it, the category of risk is a category of the understanding."

(Ewald, 1991: 199)

But it is not, of course, a universal and timeless category inscribed in human nature; rather, in a Foucauldian way, we should understand ‘risk’ as a historically situated category, having a moment of emergence deeply linked to specific values, social groups and problems. The experience of events as ‘risks’ is neither a given nor an immediate one, but requires a series of operations that transform events into ‘risks’. This transformation also requires the mobilization of a variety of knowledges and institutions framing their authority in these terms and specific rules to govern oneself and others in terms of uncertainty. And all of these mediations and operations also provide a focus for struggles, contestations and negotiations between groups, institutions and knowledges that shape the precise terms of understanding, which is why it is so important to understand how this category of experience has been elaborated historically.
This chapter briefly traces some of the conditions of the emergence of ‘risk’ as a specific experience. First we show how the experience of ‘risk’ emerged in the late twelfth century, within a particular context of negotiations between theology and mercantile practices. ‘Risk’ at this point implied the estimation of an uncertain gain/peril so that one could determine a price for it, exchange it or cover it in a legitimate contract. Second, we will show how ‘risk’ was later articulated through statistics and probabilities based on the frequency of events taken en masse and then became integrated in various governmental practices that sought to govern events that may affect a population as a whole. This was predicated upon the idea that it is only at the level of the series and their regularities that a robust knowledge and government of uncertain events are possible. Finally we will conclude by examining, through the debates on inoculation in the late eighteenth century, how this experience of ‘risk’ collided with others ways of analyzing and governing uncertain events and how these debates anticipated tensions between ‘risk’ and ‘precaution’ that are continuing today.

Of confessors and merchants’ risk in the late Middle Ages

As various historians of economic thought and practices in late medieval Europe have shown, one can identify the Italian peninsula and the second part of the twelfth century as the context for the emergence of a new word which did not exist in classical Latin: ‘risicum’ or ‘resicum’, from which are derived the vernacular words for ‘risk’. According to the most probable hypothesis, it came from the Arabic ‘rizq’, which means the ‘lot attributed by God to each man’ and, in some dialects, ‘luck’ and ‘happy chance’. According to Piron (2004: 68), resicum was first introduced by Italian notaries and merchants as a term closely synonymous with fortuna. The decisive difference introduced by the neologism [..] being that it gave the possibility of assigning it to a juridical subject. Resicum then appeared in connection with fortuna in expressions such as ‘suum rischium et fortunam’, ‘ad fortunam Dei et tuum resegum’, which convey perfectly this idea of personal assignment. Resicum is suum or meum: it refers to a particular subject and therefore can be remunerated, charged or transferred. It can also be introduced into a world of legitimate contracts and exchanges, which was not the case for fortuna Dei. Resicum was also related to the concept of periculum, which conveyed the idea of perils that may affect properties or values. The main difference from periculum being that resicum did not refer necessarily to a negative event; it meant an uncertain ‘lot’ that could turn good or wrong. This potentially positive aspect is perfectly expressed in this phrase from an anonymous Genoese poet: ‘aver reisego bon’ (to have good ‘risk’) (cited in Piron, 2004: 63).

This emergence of the word ‘risk’ to define a specific way to refer to potential events takes place in the particular context of developing commercial practices in northwest Mediterranean urban areas, which raised serious difficulties concerning salvation and religious rules, especially to justify the remuneration of a merchant who lent a sum of money and asked for interest, or who lent a boat to facilitate a commercial transaction and asked for a share of the profits. These ‘hard cases’ were discussed in theological treatises and manuals of confession. Rather than a mere opposition between religious rules and mercantile practices, historians have shown that many clergymen (especially from the Begging Orders like the Franciscans) were very close to merchants and sensitive to their preoccupations. They elaborated many categories and justifications for economic practices, insisting on the fact that secular practices should not be judged by the same standard used to govern the religious communities that tried to attain ‘Evangelical Perfection’. Secular practices could be organized legitimately by conventions, juridical rules and agreements that admitted a margin of indetermination. Their doctrine of ‘just price’ illustrates perfectly this idea (Baldwin, 1959): it was determined through conventions and agreements in
the community, without referring to a fixed and transcendental norm, meaning that the price for a good did not refer to any absolute value, but could be fixed conventionally by agreements, according juridical procedures and criteria shared by all the concerned parties (merchants, clients, etc.). An element that one had to take into consideration to determine the price was, precisely, the ‘risks’ taken by a merchant.

In this context of potential collision between religious imperatives and commercial practices, the concept of ‘risk’ took on specific importance in relation to legitimate various mercantile operations. Let us define briefly its main characteristics. First, ‘risk’ implied a distinction from the idea that events, actions and the uncertainty of future in general were absolutely subordinated to the will of God. The development of commercial practices and gambling led to the identification of a particular dimension of ‘time’ and ‘future’ that could be legitimately an object of human contracts and transactions. As the Franciscan Peter John Olivi wrote:

> the time implied in human contracts should not be confused with the condition of existence of any temporal thing; it is rather the duration peculiar to each good, which belongs legitimately to the owner of the good. This duration can therefore be licitly an object of commercial transactions, as long as it is sold by the one who owns it […] and as it contains a temporal utility that can be appreciated at a temporal price.

*(Olivi, 1295 cited by Piron, 2007: 15)*

Second, it was therefore fundamental that one could estimate quite precisely the uncertainty contained in future events. More specifically, the question of ‘risk’ was deeply linked to the estimation of the *pericula* (perils) that may affect (or not affect) the goods, the enterprises or the capital of the owner in the future. If it was possible to estimate them – to evaluate roughly their probability and assign a temporal price to them – then it was possible to exchange and ask for a wage for them. The question was all the more important given that the *pericula* to which a merchant exposed his goods and capital became the main justification for his profits, in a context of prohibition of usurious practices. The *mercator Christianus* (Christian merchant) was usually described as one who, building on his own personal capacities (*industria*), exposed his capital and goods to many uncertainties for the benefit of the community (*bonum commune*) and for this very reason he could legitimately ask for remuneration (Ceccarelli, 1999; Todeschini, 2009). This whole process implied that uncertainty was to be measured.

As historians have shown (Coumet, 1970; Ceccarelli, 2007; Piron, 2007), this effort to estimate the probability of a profit or a loss – which was fundamental to assign a price to it – gave rise to a proto-quantification of probability (or rather the actualization of the expectations of loss or profit). In turn, this played an important part in later developments of probability calculus. But it did more; it literally brought into existence a probability of loss or gain that could be separated from the good itself and exchanged for a certain price. This could be the probability of *loss* (what would be later called ‘the price of risk’) that one could transfer, for instance, to insurances. But it could also be the probability of *profit*, which one may lose whilst loaning money to someone else and could ask a compensation for it. As Peter John Olivi said, it is permissible to sell in advance ‘the probability of a future gain as it could be reasonably estimated before the gain is effective’ as long as ‘it has a specific value that can be appreciated at a temporal price’ (Olivi, 1295, cited by Piron, 2007: 21–2).

This relationship established between *periculum* (peril/possibility of loss) and profit was absolutely decisive. It was precisely because the potential gain in a commercial transaction remained uncertain and was always burdened with a potential loss that the profit was legitimate. The *doubt* (*dubium*) over the eventual results of an operation was fundamental to discriminate between
illegitimate usurious and legitimate contracts, especially because in the thirteenth century the identification of usurious practices relied more and more on an examination of the intentions of the contractors (Todeschini, 2006). It meant that one of the most important questions was that of the *susceptio periculi* (risk bearing), which determined who bore the risks (and which kind of risks). This was the basis for the legitimacy of profits. Someone who made profits without taking the risks on himself could be considered as usurious.

**Beyond contracts: how ‘risk’ became a fundamental category in the knowledge and government of populations**

It is clear that some important constituents of our contemporary experience of ‘risk’ have been forged through these late medieval debates. It is from these reflections and the formalization of the juridical category of ‘aleatory contracts’ that the very notion of ‘probability’ emerged (Coumet, 1970; Daston, 1988). All these debates played an important part in objectifying a particular dimension of the future that could be estimated, commoditized and exchanged. The idea that the individual who may be affected by these uncertain events bears their risks unless he transfers them, through contracts, to another private individual or entity against a determinate sum of money is essential to the liberal model of responsibility that prevailed until the mid-nineteenth century (Levy, 2012). The broader legitimation of financial profits on the basis that the entrepreneur takes on risks for the benefit of society is more enduring.

Nevertheless, there were clear limitations to the experience of risk that developed in early modernity. There were further intellectual breaks necessary for risk to become a category linked to calculating the probability of events based on the frequency and regularities of these events taken en masse, as was to occur from the eighteenth century. ‘Risk’ then became a fundamental category and technique to govern ‘rationally’, that is through a new articulation between some sciences (political arithmetic, statistics, probability, etc.) and various institutions, events that may affect a population as a whole (mortality, morbidity, crimes, accidents, etc.). In turn, this development played a role in altering the very notion of individual responsibility to give rise to a new sense of ‘social’ or ‘public’ responsibility. As we have seen, risk emerged initially inside a world of contracts and exchanges, which focused on the assignation of risk to the individual. But the discovery that risks were actually potential events, whose probability was – at the level of population – almost as regular as astronomical laws, deeply modified this situation (Ewald, 1986; Levy, 2012). One could argue that risks almost totally escaped the reach of the individual and that he could not be considered responsible for them. This argument developed in the late nineteenth century in relation to work accidents, unemployment and even crime. Even if it never totally abolished the doctrine of individual responsibility, the new risk perspective gave rise to the idea that, in many cases, risks far exceed the individual and should be governed at another level – of society – by mechanisms that don’t rely on the usual concepts of individual ‘responsibility’, ‘fault’, ‘will’ and so on. Social insurance, automatic compensations for professional or industrial risks and social defence against ‘dangerous criminals’ emerged from such a way of reasoning.

The original context for all these developments in the late seventeenth and eighteenth centuries is the emergence of ‘population’ as a specific object/subject of government practices as the principle imperative of many institutions became the preservation, growth and amelioration of the ‘population’ of a kingdom. In this context, knowledge- and data-based techniques were developed to quantify ‘population’ phenomena (mortality, natality, morbidity, etc.), understand its characteristics and even attempt to shape its future (Porter, 1995; Rusnock, 2002; Foucault, 2007). They were supported by new institutions that could centralize and normalize the data and interpret them, such as the Royal Society (1660), the Académie Royale des
Sciences (1666) or the Société Royale de Médecine (1778), all of which were closely linked to political power.

The same period is marked by a new articulation between political power and specific sciences, including statistics and political economy. The backdrop to these developments in the crucial cases of France and England was the devastation left by the religious conflicts of the sixteenth and seventeenth centuries that produced a crisis in the traditional modes of regulation of society. In response to this crisis and to reinforce the power of the State a key idea to emerge was that State policy should be shaped by administrative and arithmetic knowledge of the population. This is seen in the proponents of ‘political arithmetic’ such as William Petty (Buck, 1977; McCormick, 2009). Government was sometimes explicitly compared to a merchant who must keep their accounts and optimize the balance between its losses – indicated by deaths and diseases, for example – and expectations of profit indicated by numbers of births and healthy lives, etc. (Rusnock, 2002). Calculations of these expectancies based on vital accounts and moral arithmetic were supposed to provide a consensual and almost certain rule to govern, beyond the contradictory interests of the different factions composing the Kingdom. This idea that ‘science’ (and more precisely, some particular knowledges) could produce a kind of certainty to which government and public choices should adjust, was, however, far from self-evident. One usually referred either to a divine and transcendental law or to the ‘fundamental laws’ and customs of the kingdom. The early seventeenth century was marked by a weakening of such traditional sources of authority and an emphasis emerged instead on the necessity for the Sovereign to govern the kingdom through their own prudence or ‘virtue’, finding a way to steer through the uncertainty of a rapidly changing world. What progressively emerged was the idea that, nonetheless, an immanent order could be grasped in the chaos of these worldly events. Put into series and calculated, one could identify the regularities of these events and the population should be governed accordingly. It is in this context that ‘risk’ became a fundamental category of government as knowledges and practices of ‘risk’ were articulated with statistics and probability calculus grounded on the frequency of events taken en masse. Let us examine some aspects of these transformations.

As Daston (1988) has shown, the subordination of the practices of ‘risk’ (insurances, annuities, gambling . . .) to the new mathematical science of ‘probability’, based in statistical series, was far from a straightforward process. The early mathematization of probability itself was not focused upon the frequency of events taken en masse; rather, it emerged from a quantification of expectancies in situations where the events at stake should be ‘equipossible’, such as in a dice game or a fair contract between two parties. It was only in the late seventeenth century that probability calculus was applied to accounts produced through administrative and medical investigation (such as bills of mortality) and that it began to deal with events whose frequency was evaluated through statistical averages. This new articulation between probability and statistics gave rise to ‘a [new] interpretation of probabilities – that were originally conceived as either degrees of certainty or of equipossibility’ (Daston, 1988: 138). It is this interpretation, which postulates that probabilities of worldly phenomena can be estimated with a high degree of certainty at the level of the series and overall average (according to the ‘law of high numbers’), which radically transformed the knowledge of ‘risks’. From the middle of the eighteenth century there was an accumulation of data from deaths, births, crimes, diseases, accidents and so on, that seemed to conform to strong regularities – even laws – at the level of the series. It seemed possible to anticipate and evaluate them very precisely, suggesting also a basis through which to govern them through insurance, compensation and other forms of calculation (Hacking, 1990; Levy, 2012). The possibility also emerged of making choices about the future that could be grounded in reason, calculus and quasi-certainty – if not at the level of the individual, at least at the level of population.
Statistics and probability could therefore bring the future into the realm of what was susceptible to government, rational anticipation and manipulation.

This was not a process without complications, however, as Daston explains:

for practitioners of risk to accept the mathematical theory of risk required profound changes in beliefs and [...] values. They had to replace individual cases with rules that held only en masse, and to replace seasoned judgment with reckoning. In effect, they had to expand their time frame to the size which smoothed out local perturbations into an overall uniformity; they had, in short, to believe in the reality and stability of averages.

(Daston, 1988: 115)

This was far from self-evident. First, this was because practitioners of risk (in insurance, commerce or gambling) usually relied more on their personal ‘prudence’ or ‘virtue’ to evaluate the risks of an enterprise and these were invariably singular. To evaluate a risk was thus more a situated art than a general science; an art that always took into account the local and singular characteristics of a situation. To admit that the knowledge of ‘risks’ could be optimized (and even produced) by a paradoxical ignorance of the singularities of a situation and by focusing on the more abstract and general aspects of events taken en masse required a deep transformation in their beliefs. It meant that knowledge could only emerge through regularities and repetitions of events and could only be global, leaving the singular and local aspect of events to be mere deviations or insignificant irregularities. To grasp the immanent certainty in worldly phenomena and estimate correctly the probabilities of risks, one had to ignore these singularities and focus on averages. The knowledge and government of risks implied a correlative dismissal of the singular and qualitative dimensions of any event as a very condition of its possibility. This active dismissal could take the form of disqualifying these dimensions as irrational and biased or of minimizing them as being exceptional and therefore not significant.

The other problem in the transition process to this new experience of risk was that the relationship to knowledge of ‘risk’ in commercial practice and ‘aleatory contracts’ remained ambiguous. On the one side, legitimate ‘aleatory contracts’ required a rough evaluation of the probability of events in order to fix a price to them but, on the other side, the crucial distinction from illegal usurious practices rested upon there being an element of uncertainty, of doubt. The two contractors were to have a symmetrical and equivalent level of knowledge/ignorance about the risks embodied in the contract: they evaluated them roughly and, by consensus, agreed on a price. Referring the practices of risk to the new science of probability and statistics radically modified this situation because at the level of the series and averages uncertainty almost totally disappeared. An insurance company which, like the Society for Equitable Assurance on Lives and Survivorships (1762), based the calculus of its premiums on the averages of life expectancy as they appeared through mortality tables was almost sure – assuming it had a pool of clients important enough – to make benefits. As stated in an eighteenth century insurance prospectus: if ‘the expectancy of the continuance of life’ in ‘the lives of men separately taken [is] uncertain, yet in an aggregate of lives, [it] is reducible to a certainty’ (cited by Daston, 1988: 178). This implied a radical dissymmetry, in terms of knowledge and evaluation of ‘risks’, between the individual and the institutions and forms of expert knowledges (either from the State or from private corporations), which could aggregate events. If the true knowledge of potential events implies a capacity to accumulate data and calculate their probability accordingly, it means that only institutions who can aggregate data and experts who can calculate probability with refined techniques can attain this knowledge on risks and claim their expertise, while the individual, even the most experienced, is
condemned to uncertainty or, at best, to a very biased knowledge. This dissymmetry has both epistemological and political facets.

On the epistemological side, it meant that the individual could be described as ‘condemned’ to remain in a state of uncertainty and a world of singularities, unless guided by precepts and rules produced by the ‘truer’ level of statistical series. This situation implies a new model of governing oneself in uncertainty, where the rational individual has to estimate risks based on the long-term perspective of knowledge produced by statistical series. This situation may produce difficult conflicts concerning what it means to govern oneself ‘rationally’ in uncertainty, as we will see.

In political terms, it meant that the level of population – that is of ‘aggregated lives’ – became the most pertinent level to govern events in the future. The new knowledge of risks fitted perfectly with what Foucault (2007) has described as a ‘new political technology’: the government of populations became integrated into what he calls ‘apparatuses of security’ in which the main question is the maximization of the relationship between liberty (of individuals, goods, innovations, values, etc.) on the one side and security on the other – that is to regulate liberty and circulation so as to reduce the potentiality of damages associated with them. More precisely, as Foucault (2007: 42) underlined, this new political technology requires to operate a *caesura* between two different levels. On the one side, the multiplicity of singular events that can (and even *should*) remain in a state of uncertainty being non-pertinent to government intervention and on the other side, the level of the ‘population’, that is of the events taken *en masse*, that is pertinent for the government’s economic–political action. Events become pertinent and governable only as soon as they exceed a determinate ‘threshold’ of significance. The new knowledge of ‘risks’ operates in this caesura: it gives instruments and concepts that discriminate between a pertinent level of intervention and a non-pertinent one, helping to define thresholds and rules to estimate ‘rationally’ benefits and risks. Defining the pertinent level of action to govern events and the thresholds between when or not to intervene to limit potential damage, generates conflicts and tensions with other values and ways of governing and managing the future.

All these tensions in the eighteenth century government of risk can be illustrated through the example of smallpox inoculation. Smallpox was a terribly lethal disease, which killed even some kings, such as Louis XV. At the beginning of the eighteenth century, some physicians proposed a technique of infecting the individual with a small dose of smallpox to produce a limited infection that stimulated the body to create immunity to the fully blown infection. To prove its efficacy, physicians and philosophers collected vital statistics using mortality and morbidity tables and applied probability calculus to evaluate differential risks of death and life expectancies between the inoculated and the others. They argued that arithmetic proved, beyond all doubt, that any rational human being should inoculate his children because the differential risk of dying from inoculation and from smallpox was about 1/12. According to Diderot (1875: 208–9), for instance, one should consider ‘this question from a broad perspective, as should a Sovereign who neglects […] the small private disadvantages to focus on the benefit for the mass’. This held for the State but also for the individual, who should weigh the risks and benefits of the practice rationally, according to the truth delivered by probability and statistics. On the contrary, D’Alembert, while supporting inoculation, contested these claims. According to him, probability calculus was an abstract game of thought that could not pretend to describe or prescribe the rational process of decision making in uncertainty, dismissing all other options as ‘irrational’. He contested, in particular, that the individual should base his choices on the so-called superior truth delivered by probability and statistics. The individual needed to take into account the possibility that in some cases inoculation *can* kill someone. Even if rare at the level of population these concerns
couldn’t be dismissed as merely irrational at the level of the private individual, especially for the ‘good father of family’ who hesitated in inoculating his children. As D’Alembert wrote,

as soon as it is granted that someone can die by inoculation, I’ll never dare to blame a father who would dread inoculating his son. Because, if he dies unfortunately, the father will eternally and awfully blame himself for having hastened the death of who he holds most dear; and I don’t know anything that can balance such a misfortune.

(D’Alembert, 1821: 484)

Beyond risk? Some conclusive lessons from these eighteenth century debates

One can perceive in these debates some tensions in the knowledge and government of potential harms that are carrying on today. We may even say that, from the 1960s, D’Alembert’s arguments have gained in strength, being articulated in what may be called a ‘precautionary attitude’.

As we have seen, ‘risk’ as a political and an epistemological tool is linked to the following presuppositions. First, it is possible to reduce potential events to quantified values – homogeneous, exchangeable, susceptible of compensation – and to put them in series in order to reveal regularities that are more significant than the singularity of such and such event. Second, through these operations, one can produce a form of knowledge on potential events, defined by some specific sciences (statistics, probability, political economy), which can claim their expertise on the evaluation of risks and determine which decision is rationally pertinent in uncertainty.

More specifically, these sciences should serve as guides to define the appropriate government of potential harms and public policy should conform to them.

To these arguments, D’Alembert opposed some ideas that have been reinforced and re-elaborated since the 1960s. First, he refused to admit that all the events are reducible to a quantified value, susceptible of compensation. Some events (here, the death of a child) may be laden with so many other values – so qualitatively singular – that they’re impossible to compensate or to reduce to a quantity and homogeneous series. This idea that many events are so qualitatively singular that they’re impossible to quantify and compensate will be essential for the development of the precautionary principle, especially in reference to environment or nuclear accidents (Boyd, 2012). But one can apply this reasoning to almost everything to which one attributes an absolute value (from the death of children to health).

Second, in these cases the idea that the slightest potentiality of the occurrence of an event is intolerable. There is no question of admitting ‘threshold’, that is of admitting that the potentiality of some singular occurrences is non-significant or even normal. For various reasons, we focus more and more today on the significance of these singularities, even if they may be rare and hard to anticipate. It can be because we think that these singularities contain potentialities of future irremediable disasters or because these singularities, even if they are rare and, according to a risk-benefice analysis, insignificant at the level of the population, concern potential victims who can manifest their sufferings in the media or the courts and make their cases highly visible. Sanitary scandals, for instance, made it quite impossible today to any public decision maker to invoke ‘small private disadvantages’ on the ‘benefit of the mass’ and the importance taken by associations of patients and Medias in the public sphere have modified radically the picture (Doron, 2009).

Third, D’Alembert criticized the mobilization of ‘science’ (actually, some peculiar knowledges: probability and political arithmetic) as an arbiter and guide in uncertainty, the other opinions being dismissed as ‘irrational’ and ‘illegitimate’. In his case, it was to stress the tension between ‘public’ and ‘private’ interests and to insist on the fact that a private individual who
refused to inoculate his child was not necessarily irrational. But one can say that, today, it is more broadly the articulation between these knowledges on risk and public decision which is at stake: first, because the very idea that ‘science’ can deliver an objective, definitive and neutral truth to orient public decisions about risks is deeply contested. Science is full of controversies, inter-twined with political and economic interests, and strained by many uncertainties. Second, because many other forms of ‘lay expertise’ emerged in the public sphere, the concurrence of the expertise of these knowledges blurs the distinction between science and non-science, experts and lays, giving an epistemological and political legitimacy to many other perspectives in the government of potential harms. In this context, it is the very experience of ‘risk’ as it has been defined from the eighteenth century that is more and more contested.

Notes

1 For example, Ceccarelli (1999, 2001, 2003, 2007), Piron (2004, 2007) or Todeschini (2009) amongst many others. This part of the chapter should be read as a summary of these remarkable works.

2 The etymology of ‘resicum’ has generated a lot of controversies.

3 Fortuna refers to an allegorical representation of Providence or Destiny. Although one can play with Fortuna, accept or provoke her favours, resicum can be taken, exchanged and referred to a juridical subject.

4 On these questions, see Ceccarelli (2001), Piron (2001) and Todeschini (2009).

References


