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Methodology of organizational learning in risk management
A method of organizational risk perception by the stakeholders

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Keywords

Experience reflection, organizational risks, food-related sanitary alert, risk perception.

Abstract

This article presents the development of a risk perception and identification method and a risk analysis method for organizational risks applied to the management of sanitary alerts by the General Directorate for Food (DGAl) and the Departmental Veterinary Services (DDSV) within the framework of organizational learning in risk management. For this, organizational risks in the system of sanitary control are defined. Then, the formalism of the experience reflection method, presented in a former paper, is used as the starting point of the method. The particles of experience of the formalism make perceive critical events. These events can be interpreted as risks, these risk have a frequency and gravity. Those characteristics make it possible to deal with them on a hierarchical basis.

Introduction

Each Departmental Veterinary Service (DDSV) is confronted with situations of food-related sanitary alerts occurring in its territory of responsibility. The management of those alerts often creates an interesting experience but the organization of the control is done in such a way that this experience is not shared outside this area. We presented a method to capitalize and to share the experience obtained by the inspectors, based on the dynamics of the alert's management [5]. Development of an alert is formalized as a succession of events and decision cycles that constitute the base of the actor's experience, which they use for management of new alerts. This set of cycles constitutes a support of formalization and capitalization of the experience: a collective memory.

The organization of food alarms

Our work is based on a postulate: In the management of food alerts in France, there is a strong knowledge of the technical aspects of risks, elaborated and used by the DGAl (General Directorate for Food) and the DDSV (local agencies). But managing those alerts or crisis involves also organizational risks, which are not inevitably perceived by the stakeholders. In this paper we present a method to make those risks visible to the stakeholders. The inspectors also feel intuitively that the usual methods applied for the management of alerts and the

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analysis of the risks are sometimes insufficient; the inspectors express a need for new complementary methods, with a new approach to extend the existing approaches.

A summary of the food alerts' management is described in figure 1. In this study, the principal stakeholders are the DGAl's office of sanitary alerts and the DDSV. The prefecture plays a part at the local level, at the national level there are - non-exhaustive - the French Agency of Food Safety (AFSSA), the General Directorate of Finances (DGCCRF), the General Directorate of Health (DGS), the cabinet of the minister, the press and the General Directorate of the DGAl (D.G.). The goal of this figure is not exhaustiveness, but is to stress the existence of a sharing of knowledge of technical risks (network AFSSA - DGAl - DDSV). Also we like to stress the fact that there are multiple stakeholders in the management, at the national and local level witch can generate "organizational risks".

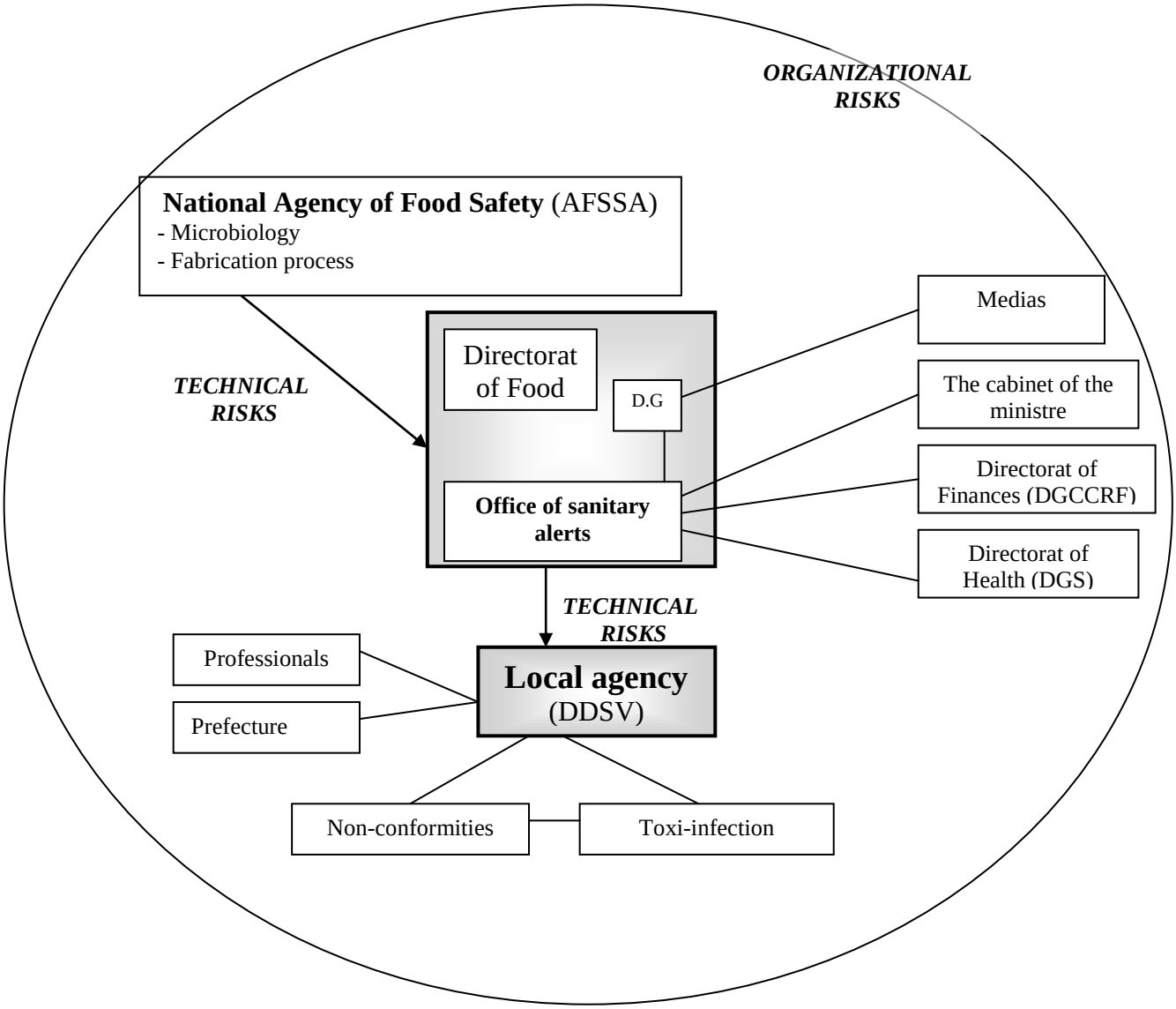

Figure 1: the system of sanitary control – viewpoint of the DGAl and the DDSV

Risk identification and perception

Our approach consists in giving a method to the stakeholders. This method assists the stakeholders to represent the risks commonly, to make them take part in a risk culture and improve risk assessment. In risk analysis, the first stage is identification. We identified three ways of risk identification (fig 2):

- Firstly, the inspectors themselves know and are conscious of some risks inherent to the system.
- Secondly, external people identify risks, often technical, for the inspectors, like the French Agency of Food Safety (AFSSA) does.
- A third approach consists in helping the stakeholders to perceive risks and more particularly, organizational risks.

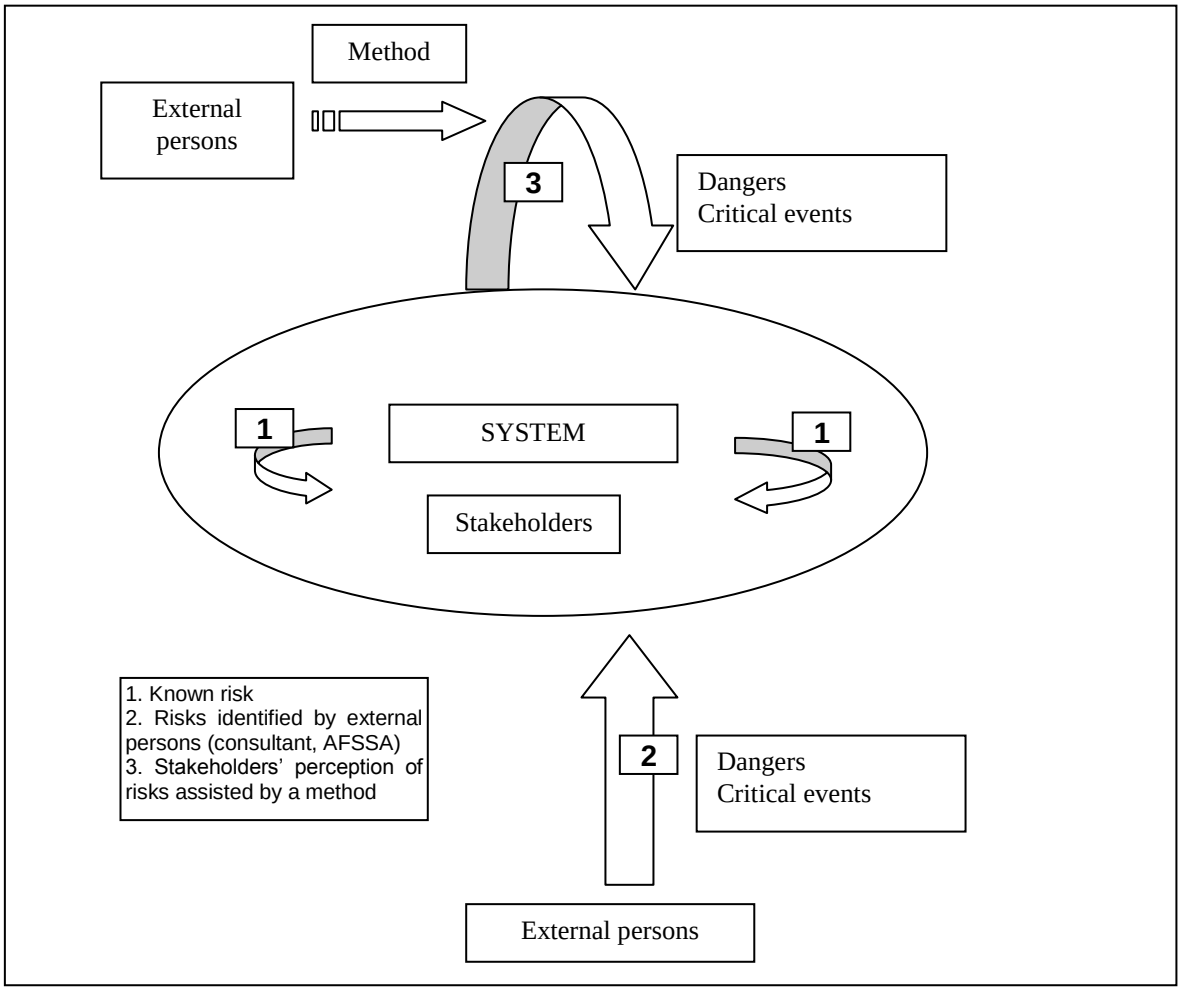

Figure 2: perception and identification of risks

The organizational risks

Bourrier [3] states that the reliability of an organization depends principally on the individual stakeholders. Our approach is also concerned with the organization and its stakeholders. We believe that the experience of the individual stakeholders is an important factor in the reliability of the organization. In this paragraph the concept of organizational risk will be specified. Firstly, we present a definition of organization: "To define a goal and to apply the

means to reach that goal, i.e. to rationalize internal resources, to specify the operation rules, procedures, regulation". [2] The risks that threaten an organization are the risk related to any event, any likely dysfunction causing a significant difference between the organization's goal and the means actually used by this organization.

The analysis of the nature and the sources of these risks makes it possible to better understand in which way the organization, as a tool for control of technical risks, is also itself a process generating risks. The modern techniques - very sure and powerful by certain sides - butts against its own complexity. The organizational risk defined by Duclos [4] corresponds to the catastrophe, the technical accident, but also the conflict, the feeling of uselessness or non-qualification, which can be formed by the systems designed to avoid the accident. This second category of endogenous risks to the organization is the organizational risk. We work here from the point of view of the DGAl and the DDSV but the organization can be considered as composed of the stakeholders (figure 1). Two kinds of organizational risks are thus identified: inside the institutions, more particularly DDSV and DGAl (questioning the legitimacy and identity can lead to specific, individual or collective behaviors, generators of crises.) and the risks created by the co-operations within the network of stakeholders (fig 1).

How can one explain the existence of such risks threatening organizations precisely supposed to control them? The activity of organizing is producing risks by itself [2] :

a. The organization is always limited:
   - Incomplete formal rules
   - Sometimes incoherent with the context, applying the same rules for problems of different nature
b. It is producing a double conflict:
   - Cognitive: the definition of risk control process often crosses different institutions who must cooperate and put their diagnosis together. However, these groups do not have always the same knowledge, the same reference frames and have thus difficulties to be understood: cognitive rupture
   - The criteria of organization can be contradictory internally and generate conflict actions.

It is thus necessary to moderate the first definition of organization: a framework of professional activities. Bossières [2] propose a new definition of the activity of organizing: "an articulation between the formal rules and the personal and professional experience". Indeed, a difference can be noticed between professional practices and the recommended diagrams of organization. The facts are there: tacit arrangements between operators, non-written rules, informal practices, informal rules complete the gaps existing among formal rules. The deviations are thus neither imperfections to be corrected nor origins of dangers and risks, but they are an essential resource to control risks induced by an hyper-complex system: the control of sanitary food safety.

The organizing activity exceeds the simple framing of the activities of work. The operators as much as the persons who conceive the system take a part in the organization. The control of the risks thus passes by the acceptance of some informal practices, regarded not as risks to eliminate but as experience. The organization will better control its risks if it learns from that experience: it will correct its errors, not by punishing people but by modifying the framework that it mobilizes. This is one of the reasons of this study: in the domain of sanitary risk control, there is a feeling that we reached a point where another approach is needed. An

approach that makes this feeling of "correction loops" and "the inspectors tacit experience" real.

Methodology of risk perception

Our approach consists in supporting the stakeholders with a method, to help them perceive and represent the risk and more specifically, organizational risks. How can we present this perception of risk and how the methodology of experience reflection [5] can be the starting point? We find the answer in the choice of the formalism. We present the critical events with their causes, their consequences and the barriers in a graph, inspired by the bow-tie diagram of Hale [1]. The elementary cycles of the experience reflection reveal those critical events.

When the DDSV practices an analysis of the alerts management, as a first step they constitute the chronology of key events with the elementary cycles, then they find hypothetical cycles: "What could have been done differently?"

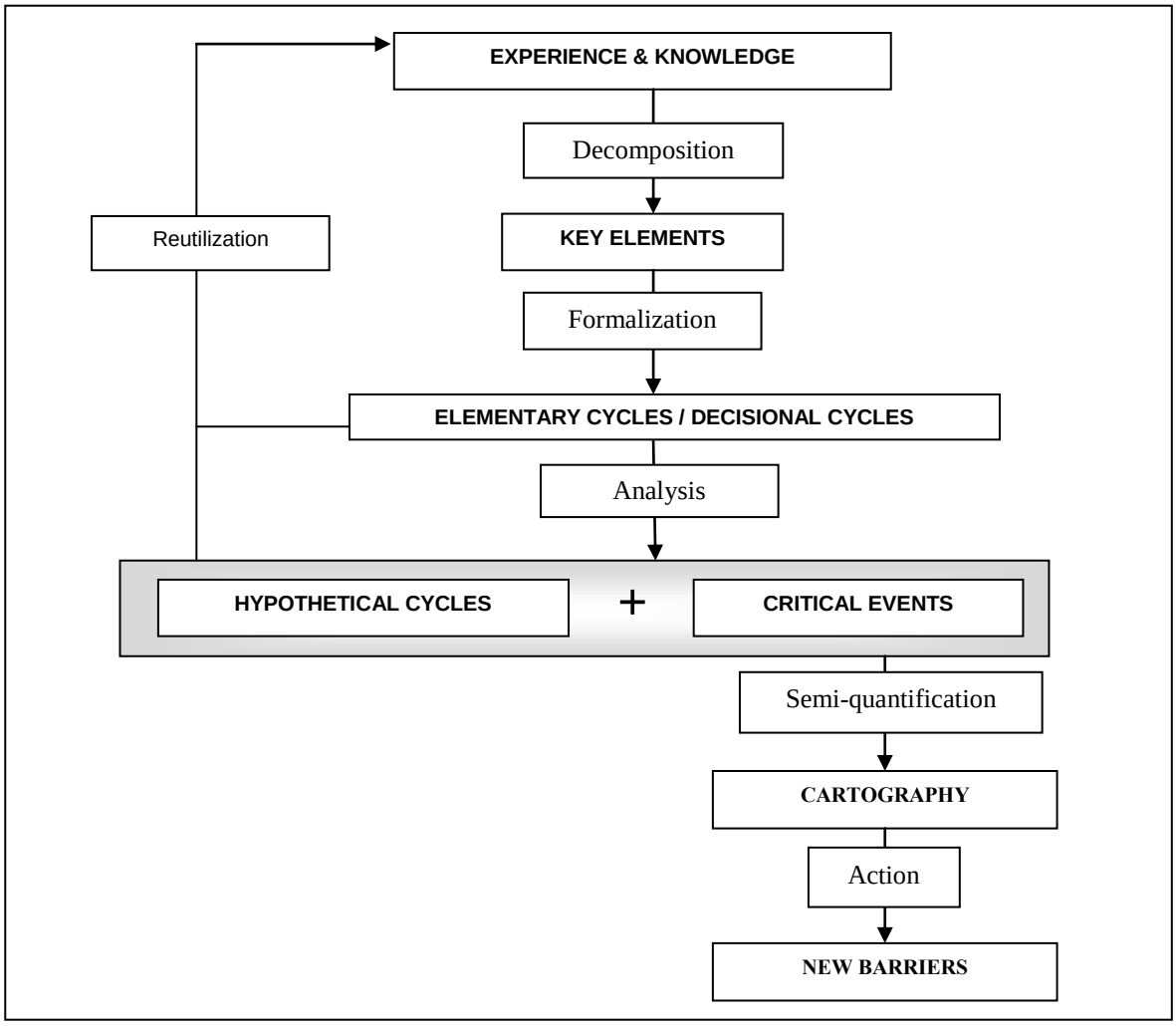

Figure 3: conceptual schema

A second phase consists in identifying the critical events. The elementary cycles make it possible to identify critical events while asking the following question: "Which situation or event have you feared during the alert management?". Then, the inspectors analyze the existing barriers or potential barriers that could have avoided this critical event or at least

limited its consequences. It is stressed during the interviews that these critical events could be related to technical, human or organizational risks. The advantage of our approach is that it applies to all the risks, including the organizational risks.

Classification of risks

The critical events are recorded in a database, with a description of their immediate causes and frequency with the barriers of prevention, a description of the direct consequences and gravity with the barriers of protection. Historical data is added, with the occurrences of the ER, date and gravity. The true work of risk analysis is in the attribution to the ER of the frequency of the causes and the gravity of the consequences. If there are no historical data yet available, an estimation is given. Progressively, these estimations can be corrected by the occurrence (experience reflection) and that gives a true measurement of risk, based on real events. These frequency and gravity provide a two-dimensional scale to assess the priorities for future actions. The experience reflection helps to identify the critical events but also helps to constitute the history of these ER to form an integrated risk analysis method.

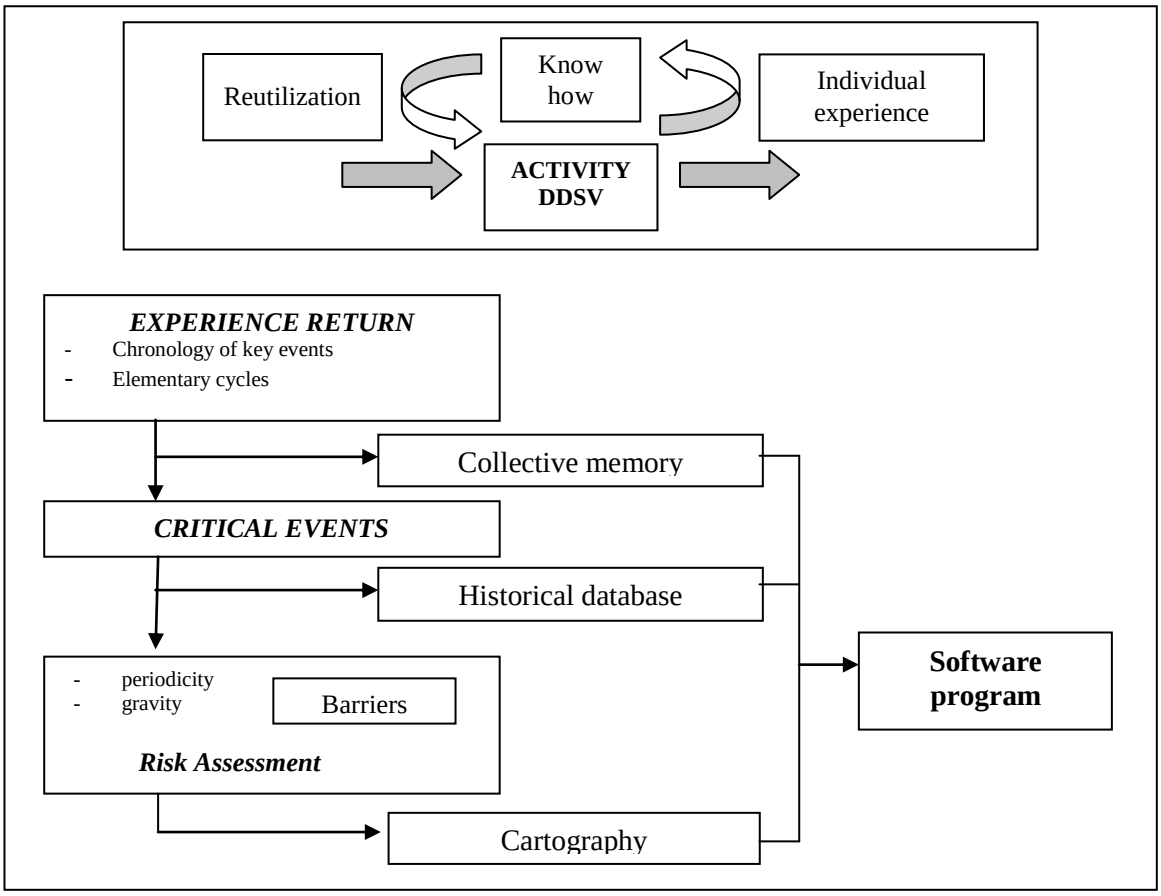

Figure 4: Structure of a software program

The cartography of risks is translated in a two-dimensional graph. The points thus obtained give a general sight of all the critical events and make it possible to focus the action on the points which are in the most dangerous zone (high gravity and small frequency). These points can be updated after each event. Figure 3 illustrates our approach in a conceptual schema.

Conclusion

The method of risk perception using the experience reflection is a complementary approach for the other methods of risk analysis. This approach assists the inspectors with a tool for the perception of organizational risks, which are generally difficult to identify. At the same time it is also a method of risk classification. This classification is based on and quantified by real facts because it uses data collected from the experience of real alerts. The method of experience reflection and the analysis of risk with the critical events are two complementary methodologies for an integrated risk analysis method.

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