Urban political approach of major hazard planning

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Today, the need to reduce the rise of disasters in cities is a priority for European governments (United Nation Strategy for Disaster reduction, 2007). Natural or industrial hazard identification is improving thanks to the mobilisation of the scientific community and the recent political awareness. Indeed, in developed urbanised countries, and in addition in cities shown as nod of economical and informational urban network, the impacts of natural or industrial disasters also produce collective damages.

The examples of three French cities (Lyon, Nantes and Le Havre) illustrate how the ends of urban public policies generate huge contradictions in risk reduction strategy. Furthermore, it also shows how urban development objectives can create "urban risks".

I will explain my point by two outlines. First, risk is defined as social construction. Constructivism does not minimise effective disasters, but it explains the role of the historical urban settlement and the contemporary goals of local development.

Secondly, both hazard identification and urban planning are described as a public policy. Drawing on theories of political agenda setting, hazard identification in urban planning is studied as a complex public policy hold by various stakeholders (either public than private) and crossed by different interests.

DEFINITION OF RISK IS BOTH AN EFFECTIVE DISASTER PROBABILITY AND A SOCIAL CONSTRUCTION

What about natural or industrial hazard? It is a prospect of danger, but it is above all a probability. Today, western countries mainly are agreed with scientific evaluations of frequency, gravity and speed of hazards (European research on natural hazards, 2008). Since the 1970's, measures of hazard identification and reduction are based on this belief of scientific capacity to anticipate uncertainty. European countries look for technical structures –for example, control barriers for flood, retaining structures for landslide or containment from dangerous industries-, or they develop "software" aspects of risk identification –for example, imagery models, multisensor algorithms, urban zoning-.

To sum up, risk management tries to reduce and to control uncertainty linked to natural and industrial hazards. Most of European researches on hazards seem to be selected on their scientific achievements more than socio-economic relevance. Nevertheless, social sciences such as sociology or political science try to show the difference between a scientific phenomenon like hazard and a social perception like risk.

From forecasted hazard to spatial and social risk

What is a risk? If hazard is a so-call logical and rational probability, risk is the result of a social equation made of three elements: hazard probability + state of economic and urban development + vulnerability. Although probabilities theories of hazard focus financial expenses, a little attention is given to the social comprehension of vulnerability of the space where hazards may occur.

The sentence "there is no storm disaster in the desert" well illustrates this three levels equation. The question is: will a storm in the middle of the desert be considered as a risk? Surely not, but if the storm is foreseen close from an economic goal, an old preserved monument or an urban place, perhaps the response would be positive. It will be certainly affirmative if those economical, patrimonial and urban targets are weak or unprotected.

It shows that hazard by itself is nothing more than a mathematic result of danger and damages probability. Nonetheless, risk occurrence is spatially located. As Valérie November (2004) says "risk can be viewed as a projection into the future of signs within a contemporary situation that effectively endanger the space in question". Damages due to risk occurrence are also linked to social perceptions of economical or patrimonial values. So, drawing from social constructivism theory, we can assert that risk is a social construction. Risk depends from what worth to be protected in a state of urban and economic development (Berger & Luckmann, 1966).
It can be hard to believe that major hazards, such as flood or chemical explosion, are not dangers - especially today in the current feeling of an increase of disasters-.
Hazards were not always seen as disasters: flood could be a natural irrigation or chemical explosion a regular danger of industrial development.

Risks as a result of a process of labeling by public policies.

The state of the art about public issues demonstrates how some topics are transform into publics problems and how some others are hidden from public awareness (Baumgartner & Jones, 1991).
This state of the art studies how a simple topic moves from private apprehension and resolution to a priority in public agendas of national or local governments. As sum up in this extract from 'Participation in American Politics', the process of agenda setting explains how « a general set of political controversies [is] viewed as falling within the range of legitimate concerns meriting the attention°» (Cobb & Elder, 1971).
Even in risk identification -mainly described as a scientific field of decision and lead by civil protection-, there is a process of labelling the risk. For example, the rise of specific issues identified as 'risks' can be related to polity competition, lobby attention or carrying capacity of a specific arena. Whatever, public governance is described in organisation studies as the final result of a "garbage can model" making process decision (Cohen, March & Olsen, 1972).
There are so many public problems labelled as collective risks that public agendas are full. It's very difficult for an issue to be labelled as 'risk' in public agendas. For example, the so-call "whistleblowers" who want to see asbestos cement or glycol ether recognized as risks have waited a long time before being set in public agendas.
From the 1980's, French government has laid down a limited number of major natural risks such as floods, avalanches, some others landslides or forest fires. It also has permitted a certain number of industrial risks such as explosion or toxic release. In addition, there is a specified number of health risks (air pollution, legionellosis, heatwave). If we categorise different risks by frequency, gravity and speed criteria, so some are excluded by the fact that they are under the measure of degree, amount or level.

To put in a nutshell, the increase of disasters leads public policies to strengthen their scientific knowledge of natural or industrial hazards probability. Governments want to reduce their uncertainty and control disaster occurrence. Indeed, there is an effective disaster when there are casualties and damages. Hazards become a collective risk after being through a process of labelling. This process identifies what worth to be protected. Risk identification is not only a mathematic result but a social perception of threat and value. As public agendas are packed, social and political mobilisation for risk reduction has to be big enough to be recognized by public policies.

Today, growing urban spaces concentrate economical, social and human values. In recent times, western cities seem to be vulnerable to natural or industrial hazards. As scientific probability is more and more precise, urban population can not bear damages -and on occasion casualties- when risks occur in cities. Even if, some cities are supposedly unsecured, urban spaces still carry an image of collective protection from fate catastrophes.
According to me, the crossed-field study between urban planning and risk identification can explain the contemporary contradiction between the importance of security techniques and the feeling of vulnerability in cities (Beck, 2001).

HAZARD IDENTIFICATION IN URBAN PLANNING IS A PUBLIC POLICY CROSSED BY CONTRADICTORY INTERESTS
Before describing the characteristics of risk zoning policy, similarities and differences of the three French cities presented as examples have to be set.
The three cities are middle range cities: Lyon (470.000 inhabitants), Nantes (280.000 inhabitants) and Le Havre (180.000 inhabitants). The harbor influence has built a history of exchanges. Each fluvial harbor is characterised by a different degree of commercial and industrial activity. Lyon and Le Havre have kept a chemical and petrochemical activity. In Nantes, industries have mainly disappeared in the economical crisis in the 1980's. Today its development is based on services, knowledge economy but most of all on an attractive urban way of life. It is explained by the quality of environment and the proximity of a preserved sea-coast. Lyon and Le Havre make profits with their industrial sector but their local urban policy want to decrease the impact of industrial pollutions and risks. Today Lyon and Le Havre put forward the quality of their natural and patrimonial landscape in order to be identified as a modern metropolitan city.
Even if the size of Lyon, Nantes and Le Havre can be compared to European metropolis, their urban development policy is to collect metropolitan symbols. It refers to the elements of contemporary urban model of development in Europe. French Urban policy is looking for achieving this model, but it assumes to collect industrial dynamism with environment quality, innovation and tradition, international hub of transport and local sustainable public transports (Tannery & Boino, 2007). According to me, this dream of "local metropolis" leads to confusions in urban policy priorities and furthermore, it creates contradictions in risk identification and planning.

How does French urban planning policy integrate collective risks in mapping and development strategy? From the 1980's, urban planning has tried to manage major natural and industrial risks by mapping spaces of risks occurrence. Urban laws have forbidden constructions in major risks spaces. Far from the principles of "living with the risk", France government has chosen to remove urban activities from the sources of risks. This legal principle includes only major risks. It is known as "distance from the major risk".

Besides the rules about major risks integration, urban planning policy has it own process of selecting major risks. Clearly, some majors risks are integrated in urban mapping and some are not. Based on the urban public policies of three French cities (Lyon, Nantes and Le Havre) in 1990-2005, I want to show that risk identification, mapping and zoning are all except an objective process of civil protection. I introduce two characteristics which analyse risk identification and planning as a result of a complex public decision-making process in those three cities.

First, risk identification defines risks areas to prepare an urban plan. It is a deal of risk acceptance between actors of civil security and urban development. It is also a confrontation between past urban policy and contemporary metropolitan network system. In the 1960-1980's, French urban zoning policy was less severe about banning urban development from risk spaces. With urban spreading, some areas of cities have grown very closely from natural or industrial risks. In addition, urban large technical systems (electricity, gas, waste, water, etc.) are enhanced in the city. That created space of urban vulnerability. The concept of metropolitan vulnerability means that urban space – as a nod of flux of goods, services, people or information- "reinforces the probability of all kinds of disaster occurring" (November, 2004).
Secondly, risk planning determines how construction rules of risk areas are incorporated in urban plan. It is a deal of responsibilities between public actors. It is also a conflict of interests between national State and local institutions. In France, in the 1980's, the Decentralization Law has delivered policy fields between national, regional and local authorities. Risk identification and urban development do not fall within clear competences. Because of civil security role, national State keeps "tools of government" to decide how to prevent major risks in local authorities' urban planning.

Risk identification: conflicts of interests between security and urban development

In France, urban planning belongs to local authorities. Civil servants have a key role to identify risks areas in urban schemes. Local elected members often get involved after many negotiations between civil servants. I will explain how the conflict of interests between civil servants from security and from urban development contributes to build political decisions.

On one hand, civil servants in charge of security preach for a large definition of risks. They want any kind of building to be forbidden where a risk can be identified. On the other hand, civil servants in

charge of urban planning advocate the impossibility to prepare urban schemes take all probabilities of danger into account. They argue for a minimal interdiction of building in risk areas.

For example, in Nantes, this debate has frozen the urban plan during one year. The risk identification in question was a flood area along the Loire River. Civil servants in charge of civil security found new pieces of information about the extension of flood area. This flood forecasting data existed, but not formalised by official local urban rules. So, immediately, civil servants in charge of urban planning denied the legal acceptability of an expansion of flood area.

The controversy really takes place between local civil servants because the elected members were too torn between security and development. Civil servants of security told to representatives that they could not put population consciously in danger. Civil servants of urban planning argued representatives could not stop urban development for probabilities.

Civil servants responsible for urban planning got the end words. They explained local elected members would be responsible for any modification on past legal flood plan -which was realised and approved by national State service-. So, if a building moved to a flood area, the owner can turn on local authority and the major would be responsible.

The case of landslide risks in Lyon will be my second illustration of conflicts between security and urban development. The city of Lyon is surrounded by little mountains. There are water springs inside. This area has been urbanised for centuries. Today, water supply and urbanisation have increased the risk of landslide. Nevertheless, the area still represents a lot of land available. Those woodlots are also attractive for people.

Few years ago, the problem was the lack of any official report on landslides officially produced by national State services. Consequently, civil servants of security brought forward hydro-geological studies. They known their documents had no legal validity in face of urban development strategies. As in the example of Nantes, civil servants of urban planning wanted to provide plots of land in this supposed landslide risk area. They even uphold that building could create retaining effects on mountains. Nevertheless, civil servants responsible for security kept arguing it would be irresponsible to allow building permits in scientifically known landslide areas, even not officially attested. They tried - without success- to increase elected member awareness of their accrued liability.

The first conclusion points out that it is more important to control rules than to have hydraulic models. Civil servants in charge of urban development had power in risk identification because they manage the application and also the circumvention the Law. Generally, public policies are half built with legal conventions and half built with the capacity to public actors to shift them on their profit (Lascoumes, 1990).

The second conclusion indicates the paradoxical situation between, on one hand, the technical debate hold by civil servants and, one the other hand, the political responsibilities of representatives. Experts have a powerful position in risk identification. On the contrary, elected members make decision under the fear of blame.

The third conclusion illustrates that civil servants of urban development have been particularly bitter in struggle when risk identification impacts urban projects of development. This is also highlighted in my thesis by others examples in Nantes and Le Havre (Gralepois, 2008). When risk mapping concerns a future urban plan, civil servants in charge of urban development do their best to cancel risk identification or to avoid their legal effects.

Risk planning: a negotiation between national and local authorities

This conflict between security and development also exist between national State and local authorities. National State has regional services. They are separated from local authorities' competencies. As I said, national State has the power of defining what major risks are and where they occur.

On one hand, national State is supposed to provide an objective position in risk planning. They create models of major risks measure. They impose "methodological how-to plan risks" guide. They also check if urban rules linked to risk identification are respected in local authorities' urban plan. On the other hand, local authorities are responsible for local urban planning policy. They deny the right for national State to interfere in local urban planning policy through risk planning.

For example, in the city of Lyon, a very conflicted situation has emerged in risk flood planning of the Saône River. National State regional service is in charge of flood mapping. Few years ago, local authorities raised cases of inequalities in risk mapping on different cities along the river. According to

some elected members of cities -especially the majors-, national State service have drawn risk area lines in total ignorance of economic and social realities. Civil servants responsible for security and urban planning tried to install an arena of mediation between majors and national State services. Both sides have contributed to the failure of the mediation.

National services maintained its expertise on risk planning and confirmed the legitimacy of its flood mapping draw. They also exposed as unreasonable the majors' defence of local interest in spite of national protection. National services offered proof that local authorities disputed flood mapping where urban project of development was expected in years coming.

Majors kept refusing to approve the flood mapping. They went directly to see the Minister to negotiate the draw of the flood mapping line. They rallied their political network to build advocacy coalitions (Sabatier & Jenkins-Smith, 1993). Then, they succeeded to put pressure on Minister by returns of their political agreement in others decisions. Effectively, they manage also to move the flood mapping drawn out of future urban projects.

This local political trauma in Lyon is not an "isolated syndrome". It also happened in Nantes and Le Havre. Since those conflicts around natural risk mapping have taken place, local negotiations about recent reforms of industrial risk planning are very tense. National State services adopt a very rigid position on their industrial risk expertise.

Le Havre is a city enhanced in many dangerous industrial and petrochemical plants. National State services impose a complex process of modeling industrial risks. Their expertise does not provide an objective point of view. It acts as a barrier to debate about industrial risk planning. Hence, it is impossible for the local authorities of Le Havre to talk about the consequences of industrial risks areas in urban planning.

As a consequence, local authorities have chosen to avoid debates with national State services about industrial risk mapping. They escaped conflicts by elaborating urban strategies. First, local authorities bargained directly with industrial owners to reduce dangerous products. They expected toxicity reduce would diminish the risk area line. Then, local authorities tried to negotiate the building rules in what they call "no man's land" in industrial risk areas. In facts, they moved the discussion from the draw of risk area to the rules of construction. In a way, they slightly move from the French principle "distance from the risk" to another one principle of "living with risks".

To sum up, risk planning takes place in multi-level governance context where arenas of discussion are progressively banned. Beyond official positions, nor national State services, nor local authorities are ready to make a step forwards new conditions of negotiation. Situations are particularly tense for the application of the recent industrial risk planning Law. It has been approved in 2003 and not an industrial risks map has emerged yet.

The first explanation is the ambiguity of national State role in local urbanism. On a hand, national State pushes officially principles of decentralisation. On the other hand, its keeps tools of government by imposing process of modeling or by editing methodological guidelines (Hood, 1983).

The second explanation is the paradoxical position of local authorities. On one side, they pretend to have more local knowledge and accurate information to realize risk mapping. On the other side, local authorities often give priorities to urban development instead of risk planning.

As a last conclusion, can we make propositions to rise above those perpetual conflicts?

Risk planning transactions break down because of risk area mapping line. This line is nothing but a draw of risk possibility. Often there is a margin of error. Once translated in legal terms, the line divides area where building permits are allowed or forbidden. To rise above conflict, urban and risk planning should work closely with emergency management sectors. For example, in some cases, risk occurrence is very slow. We can imagine cooperation between civil security and urban planning around conditions of rescue for certain activities.

This cooperation would be possible if public actors in charge of civil security and urban development stop discussing about the nature of risk. Effectively, civil security professional culture tends towards a large approach of risk. They do not have the urban planning culture of zoning received in inheritance from architecture sector.

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