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The institutionalization of biodiversity as a public issue. The example of deadwood conservation

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Introduction : selective requirements of biodiversity conservation policies

Since the seventies, environment has been elevated to the status of a major public problem so that discourses and social actions must often be reformulated around this question to be legitimized (Kalaora, 2001). However, all environmental issues do not get the same response from the public. Climate change or food quality are frequently considered by the general public to be potential environmental threats for human beings.

But other environmental issues –biodiversity, for example – spread more slowly into the realm of public knowledge, and people are often unable to provide a concise definition of the term. They have limited knowledge of local biodiversity while they are able to identify threats in African or Asian "biodiversity hotspots", the massive extinction of species due to human activity, the disappearance of emblematic animals (whales, elephants, bears, wolves), the deforestation of the tropical forest, (Hunter & Brehm, 2003; Lindemann-Matthies & Bose, 2008), etc.

When we carefully look at the action programs in favor of biodiversity, we observe that biodiversity actions are very selective. The conservation of some emblematic ecosystems or species is exemplified by scientists or environmental institutions with the secret hope that the public will join in, consolidate their actions and transform a confidential question into a public problem (Machlis, 1992).

In contrast, entire compartments of the ecosystem such as insects, fungi, soil microfauna and bacteria are completely ignored by the public and they are often viewed with attitudes of fear, antipathy and aversion (Kellert, 1993). Even research programs on these species are rarely financed by policy-makers (Dunn, 2005). However, for supporters of biodiversity conservation, it is less and less acceptable to qualify some species of the ecosystem as "noxious", "harmful", "pest" or "vermin" (Micoud, 1992); for them, the integrity of the "living chain" and the interdependence of all its components is essential.

The objective of the study

My research question is the following: why do some aspects of biodiversity conservation become widespread through the scientific sphere, the media and the public opinion, whereas others aspects as deadwood conservation are hardly ignored?

I have adopted the theoretical framework developed by the French sociologists Cefaï and Trom (2001) who propose an analytical grid to analyse collective actions and social movements. Based on the theoretical perspective of frame analysis developed by Goffmann, they make the assumption that the defence of social or environmental issues and the mobilization of activists and sympathisers' networks must follow a specific grammar of public life and debate. This succession of stage is essential to define – or to frame- the problem as real, objective and worthy of interest and then to find an echo among the public opinion (Cefai, 2001, p. 51).

These frame stages consist in implementing interpretation schemes – a vocabulary of motives – "to localise, to identify and to label events and situations in order to organise and to orientate collective actions". For Trom and Zimmerman (2001, p. 282), the emergence of public problems is not always the consequence of a deliberate and coherent action nor the result of a protest campaign by a well-identified social group. The first stages of public problem emergence are often characterized by indecision, disagreement, trial and error as far as the strange feeling of embarrassment emerges as a an obvious public problem, that is to say, a collective, stabilized and common view to perceive a situation , an object or an actor as problematic".

Cefai and Trom identify five main stages for the institutionalization of public problem. While I present this five stages, I will implement their analytical grid to a very specific and tiny problem of biodiversity : the conservation of the fauna and flora associated to deadwood in European and French forests. My final research questions is: Is deadwood conservation institutionalized as been a public problem, how and at what stage of the process can it be located?

1. Prefiguration of a public problem : differentiation, denunciation and protest

- The precursors of the institutionalisation of public problems

The emergence of a public problems is not always the consequence of a protest campaign by a well-identified social group. However, at he forefront of the action, we often find a multitude of small, local associations and scientists – more or less isolated – who militate in favour of a category of object that they want to be taken into account by public policies. For deadwood preservation, scientists where dispersed in one or two Scandinavian, Swiss and French laboratories and their messages were more or less passed by few local NGOs. But these individuals were isolated and their category of problematic object was not stabilized enough so that their claims could not be supported and institutionalized as a public problem. To stabilize this category, they have had to prove that fauna and flora associated to deadwood were endangered and to convince a larger panel of sympathisers that this aspect of biodiversity was worthy of being considered as a potential public problem – and more than others biodiversity issues– . Another challenge was to prove that deadwood conservation was not a private problem but public goods that had to be taken into account by public policies.

- **To name the category**

For Cefai and Trom, the emergence of a public problem needs the creation or the use of categories and vocabulary of motives that identify and defines class of objects, of things or of actors affected by a public problem. But some categories of objects have no name or their name are so negatively connoted that it is very hard to mobilize public opinion. To name the problem – positively, if possible – is essential to attract colleagues from others scientific disciplines, decision-makers and public opinion.

To institutionalize the diversity of living beings and to alert public opinion about the massive extinction of species, the term « biodiversity » has been created and proposed by the scientific organizers of the *National Forum on Biodiversity*, a symposium organised in 1986 by the American National Academy of Science. With 14,000 participants, this term has found a large echo during the following years. In 2008 a brief overview of the database Scopus shows that 700 annual scientific articles use the words "Forest AND biodiversity" in the title, the abstract or the keyword (400 for "Forest AND climate change").

Concerning deadwood, there were 3 articles per year dealing with "deadwood" or its synonyms in 1996. But this common-sense term seems to be just a prefiguration of another term that is frequently used in the scientific community. Between 2005 and 2008, whereas the word "deadwood" has never appeared more than 15 times per year, the term "coarse woody debris (CWD)" has emerged in the scientific sphere as a unifying and distinctive word that annually appears more than 30 times. This statistical overview shows that the first step of institutionalisation that's consist in naming the category of problem is never definitive and is still moving: Some biologists notice that "deadwood" does not mean dead trees: tree biology demonstrates that young tree produce dead branches, that heartwood decay begins during the tree biological maturity, and that relatively large branches in the lower canopy die but remain attached for a considerable length of time as the tree attains full canopy development, tec. (Alexander, 2008)… How these elements can be named? Certainly not dead trees, perhaps deadwood, CWD, woody necromass…

Despite these difficulties to give a name to a category of object that really exist, a specific glossary has enriched the common-sense notion of deadwood. When we are listing the different types of deadwood that are described by scientists, forest owners and lay public, we identify 15 to 20 categories of deadwood such as "dead hollow tree", "decaying tree", "logging residues", « slash », "stumps", "uprooted stems", "branches", "twigs", etc. Qualitative survey also has shown that this extensive glossary is used by very different social group such as scientist, foresters or the lay public (Deuffic *et al*, 2009). Foresters used some scientific terms to talk about deadwood; on the other side scientists used technical terms used in forestry.

- **To distinguish the problem from the others by denunciation and protest**

To be able to name the category of object is not sufficient to be elevated to the status of a public problem. This problematic object has also to be distinguished from others problems that likely may attract public attention. For Trom and Zimmerman, the process of denunciation allows to distinguish biodiversity or deadwood conservation issues from others environmental problems.

The registers of denunciation and claim making often insist on the lack of financial means, of orientation and of coherence that doesn't allow to take the specific problem into account seriously. This register of denunciation aims at mobilizing significant additional means in terms of public actions and policies rather than one-off, temporary and uncertain assistance. For deadwood conservation, one register of motives aims to generalize and to extend the policy of deadwood conservation from natural reserve to the whole French forests.

This rhetorical register of denunciation is also coupled with a rhetorical register of dramatization. The loss of biodiversity is associated with the idea of a massive extinction of living species including human beings. For deadwood conservation, the rhetoric of dramatization is less tragic and less convincing even if scientists remind us that 40% of saproxylic beetles are endangered, that the existing populations are limited, scattered and declining (Seight, 1989) and that these species are essential for forest soil restoration and cycle.

- **To rewrite history and to reconsider the facts**

After naming and dramatizing the situation, precursors reconfigure and rewrite the problem with their own words and their vocabulary of motives to make it acceptable and audible for a larger public. Micoud (1992, p. 81 sq.) calls "reproblematisation" (or reconfiguration of the problem) this step of institutionalization. This reproblematisation often induces:

- The rewriting of historical facts: Precursors have mobilized forest historians who showed that the negative relationship between deadwood and foresters had been socially constructed and that this pejorative vision of deadwood was very relative from a historical and social point of view (Bartoli *et al*, 2005). The perception of deadwood as a waste or a residue dates from the 19th century. Before this period, deadwood was a vital source of energy for lower social class. From a sociological point of view, historians also showed that the negative image of deadwood has been largely spread by forest officers who wanted to promote timber rather than wood energy. They even promulgated rules that strictly restricted deadwood harvest at the expense of rural societies;
- The reconsideration of facts: the negative vision of deadwood conservation was based on the idea that pest and noxious animals associated to decaying trees were a source of contamination for healthy neighbouring trees. To avoid the systematic eradication of the fauna and flora living in dead trees, the "precursors" have distinguish two sub-categories of insects: the "pests" which are noxious for trees and the "predators of pest" which could become an ally in biological pest control. Even pest have been renamed as "problematic animal, momentarily and locally proliferating". This reconsideration of insect impact on forestry is essential as it can justify the suspension of deadwood elimination from forest stands.

2. <u>The production of a category of public problem : exhaustive inventory, generalization</u>

- **To inventory the category of problematic objects worthy of interest**

If deadwood conservation is not yet institutionalized, deadwood elimination is – at least – considered as problematic. During this second stage, a vast number of objects and situations is identified, described, classified and often qualified as "exceptional". As the few precursors are

not competent enough to describe all theses objects, they have to mobilize and to enrol a larger panel of scientists. The production of the category of objects that are worthy of public interest and perhaps later of public policies, is based on scientific protocols, a corpus of specialized knowledge, classification lists, inventory processes and on specialists and experts who are the moral authorities that could establish the reality of facts, the objectivity of the problem.

Concerning biodiversity, this inventory work has begun in the 1980's and has been reinforced with the habitat directive and the Natura 2000 network. The creation of cartographic, statistical and ecological databases has contributed to name, to objectivize and to qualify categories of objects that were previously ignored. However scientists have rapidly had to faced with the immensity of living beings – even for a very small compartment of biodiversity as the fauna and flora associated with deadwood ». They had to chose which object would be worthy of interest and which one would be ignored. For deadwood conservation, insects have been particularly well studied, and inside this category, beetles and more precisely saproxylic beetles at the expense of moss, lichen, or fungi.

This stage of inventory is crucial as this selective sorting of the category of objects worthy of interest can induce others problematic problems in the future

- Scientists and decision makers often sort out these objects in order of priority (see the UICN red list) ; they become progressively emblematic and they embody the public problem alone in expense of others objects which are totally neglected;
- the subdivision of public problem into tiny categories sometimes confines the problem to microscopic elements of only very local interest instead of generalizing it on a larger public sphere.

- **To change scale for more visibility**

Bringing together these scattered problematic objects contributes to the emergence and the visibility of the public problem. The change of scale – from local to global – create a potential arena of debate and collective mobilisation (Trom *et al.*, 2001, p. 295).

To stabilize the category, singular, local, particular and problematic case or object has to be reconfigured in reference to general principles that are operating in the frame of political and administrative actions. This change of scale have occurred when scientists have shown that the extinction of some very specific species in very local situation was emblematic of a more general situation that could be resumed as "a nature in danger". This logic of exemplarity contributes to strengthen biodiversity as a public problem. It have also found an echo among policy makers who were sensitive to this vocabulary of motives based on new emblematic species and who claims for the implementation of collective action on a worldwide scale, for the preservation of public goods and for the benefit of the future generation, etc.… (*ibid.*, p. 295). This reconfiguration of the problem can partly explain why 150 countries signed the *Convention on Biological Diversity* (CDB) in 1992. If this international treaty aims to sustain the *diversity* of life on Earth, it also gives a collective frame, a global visibility, and a legitimacy that has transcended national boundaries and the sphere of specialist in ecology and biology. For the supporters of deadwood conservation, the convention on biological diversity has also been an unexpected opportunity to publicize their own category of problem. To take care of saproxylic carabids was not a mad idea of eccentric scientists but an action of public interest.

3. **Networking, mobilisation and institutionalization**

The important point of the third step in institutionalization of public problem is the creation of a network of scientists, policy makers, professionals, NGOs, etc. The aim of this network is to embed their category of problem from the sphere of specialists into the lay public, and from a local place into national and international decision arena. The networking of information and knowledge and the combination of competences confers to the problematic object the power of a stabilised category worthy of specific vigilance, of public measures and even sometimes of structural public policies.

To avoid to preach in the wilderness, the construction of social network is strategic and can be divided in several step (Callon, 1986): the definition and the convening of social actors who will be members of the network (according to criteria that I will not detail in this paper), the enrolment and the construction of alliance with partners that share your opinion and the mobilization of these allies during the debates with networks of opponents. A successful internal structuring of the network contributes to mitigate the contradictory arguments between members and to exhibit homogeneity of opinion in public forum of discussion. Even if the final result of the debates is never sure, networking is an essential step to publicize a category of problem.

Concerning deadwood conservation, the constitution of a thematic network on this topic shows a difference between:

- on one side, the "precursors" as scientists who have identified, defined and described deadwood by scientific methods and NGOs who have stimulated the debate and have claimed for public policies to conserve this category of objects;
- on the other side, the policy makers as the ministry in charge of agriculture, and forest or the ministry of environment which have strengthened the public problem of deadwood conservation by the judicial techniques. However, for the moment, standards, rules and norms are still in project. If biodiversity indicators have been evocated at the first Ministerial Conference on the Protection of Forests in Europe (*MCPFE*) in 1990, the creation of a specific indicator of sustainability dedicated to deadwood (criteria 4.5[1]) has been decided only during the fourth ministerial conference in Vienna in 2003. At a French level the French National Forest Service (ONF) have promulgated an internal standard but the maximum threshold – one cubic meter of deadwood per ha – is largely underestimate if we compared with the Swedish standard that recommends from 5 to 20 cubic meter per ha.

When the category is publically admitted, either the institutions integrate the new vision of the problem, or they maintain it in a marginal situation. In extreme situation, policy makers may not adhere to the new beliefs and vision of the problem but they let the precursors and their sympathisers acting as they want as long as they do not disturb public order.

[1] Criteria 4.5 : Volume of standing deadwood and of lying deadwood on forest and other wooded land classified by forest type

4. **Step 4 : Integration, rehabilitation and transmission knowledge category** :

For Trom and Zimmerman, the four stage of institutionalisation is characterized by the integration of the category in the public sphere.

- Integration and rehabilitation

As the problematic character of the category decreases, its diffusion in the public sphere increases. Taking the category into account becomes widespread through the lay public and the society in general. The category is embedded in daily experience and people even join forces and take action in favour of the defence of the category (Trom *et al.*, 2001, p 306).

According to Micoud (1992, p. 82), the problem may even be rehabilitated: the esteem of the object or the individual who have been the victim of unfounded suspicion can be restored. But rehabilitation needs the production of new facts that can testify that the victim had been accused for acts it never committed or not as much as people believed. It also requires a period of publicity and mediatization of the new facts and of the judgement revision. For deadwood, scientific studies have proved that some insects living in dead trees were useful to regulate pest invasions. These results have been publicized in the community of forest researchers and forest officers during two European symposiums in Italy in 2003 and in France in 2004. The slogan uses to rehabilitate this category was: « deadwood and hollow trees, a key to living forest ». For the lay public and scholars, WWF communication mobilizes models such as "Hector the deadwood" to talk about forest biodiversity. Reintroduction or remediation is the ultimate step in the rehabilitation of the category. As the object was previously hunted down, it is presently not only rehabilitated, protected and preserved but even reintroduced in its natural area.

- Naturalisation of categories

At a collective level, public actions dedicated to resolve public problem are institutionalized in public policies, standards, and in all kind of institutions as professions, NGOs and associations who claim for the monopoly of competence on this topics (Trom *et al.*, 2001, p. 307) ». The new specific glossary of the categorial object is slowly incorporated – embodied – in everyday language. It may be mobilized as a resource to qualify objects, situations or things that are now in their universe of thoughts and practices (*ibid.*, p. 307). For Micoud (2006), the integration of the category is so obvious that it seems to be natural for people to take it into account; action in favour of the category becomes a daily routine (ex: the selective sorting of household waste). However these routine actions sometimes loose their efficiency and their relevance. For Berger and Luckmann (1996, p. 161), social actor sometimes apply these actions because experts testify that they are fair and true, not because they works.

At a personal level, the integration of the category do not mean that all the individuals have interiorized the new categories of thought or that they fully adhere to the new way of taking the problem into account. The production and stabilisation of these categories are not linear. Categories may be criticized, manipulated, deeply reconsidered. If new common-sense elevates environment to the status of a major public problem, many foresters also consider environmental standards with detachment so that they sometimes deviate from the rules. They admit the importance of deadwood preservation, they conserve some piece of deadwood but they also burn logging residues and decaying trees – and the biodiversity inside – if their presence conflicts with

principles of reality such as economic profitability (Deuffic *et al*., 2009). A national quantitative survey has revealed that 50% of the respondents are more disturbed by deadwood residues than by the bad maintenance of road and path or even the presence of logs on roadsides (Dobrée, 2006). This example indicates that deadwood conservation is integrated as a public problem by scientists, policy makers and environmentalist NGOs but not yet by a majority of foresters nor by the public.

- Standardisation

When voluntary adhesion is ineffective, when naturalisation does not work, the promulgation of compulsory rules and coercive standards is sometimes requests by precursors. Their normative dimension is based on:

- The reference to superior texts, law or treaty that gives a general frame to the national standards. Concerning biodiversity, the French national strategy on biodiversity promulgated by the French government in 2004 is an adaptation of the Convention on biological diversity. Concerning deadwood, the MCPFE conference in Vienna will also be the general frame for the definition of the problem and the range of action that will be decided later at a national level;
- The support of scientific and technical knowledge and expertise that define the content of the standard, the field of application, the limits, the procedures of control and the sanctions. In the field of forest management, these standards are indicators of sustainable management that are more incentive than coercive;
- The attribution of new competences or a specific status to the individual who will be in charge to control the implementation of the standards. In the French Forest Service (ONF), environmentalist technicians are specifically responsible for the implementation of the standards concerning biodiversity in general and deadwood conservation in particular.

- Perpetuation and transmission of knowledge

The last step of integration of the category of thought is its transmission through generation. For Berger and Luckmann (*id.*, p. 100), the institutionalization of categories is characterized by its progressive simplification all along the process of transmission. Public problems become categories of thought and, at the end, just a slogan. : "*deadwood, the richest habitat in a healthy forest",* or *"deadwood, a key for living forests"*. This expression must be easy to be learnt and memorized by scholars, by foresters and the lay public.

5. **Adjustment and decategorization**

This last stage is characterized by a reflexive overview on the whole process of categorisation and institutionalization. Some adjustments of the category are done to integrate particular local cases as far as they do not deeply interrogate the category itself. When those readjustments fail, when the relevance of the category is questioned, decategorization occurs. All the objects, their definition, the vocabulary of motives and the glossaries are reconsidered. The dismantling of the category does not necessarily induce the reconstitution of a new category of public problem.

Former frames may still be maintained but they are severely discussed (Trom *et al.*, 2001, p. 309). A strange feeling of perplexity emerges among isolated protesters – is close-to-nature forestry the best way to preserve biodiversity? – and a new cycle of institutionalization begins.

Conclusion

The process of the institutionalization of public problems proposed by Trom and Zimmermann seems a little bit linear. Perhaps some stages happen simultaneously and not only successively even if they are probably not inverted. The example of deadwood conservation also suggests that the different groups of stakeholders are not at the same stage in the process of institutionalization. Scientists, environmentalist and few close-to-nature foresters have passed the third and even the fourth stage. Policy makers are present now at the third stage of institutionalization and the fourth one for standardisation. But where are the majority of foresters who are often distant towards environmental recommendation? That is the objective of the research programme we have launched for few months.

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