

The symbolic order of objects and the frame of geographical action:

An analysis of the modes and the effects of categorisation of the geographical world as applied to the mountains in the West

To be published in **GeoJournal**

Bernard Debarbieux

Department of Geography, University of Geneva, UNIMAIL, Boulevard du Pont d'Arve 40, CH 1211 GENEVE 4 ; e-mail : bernard.debarbieux@geo.unige.ch

Abstract : *Societies cope with their geographical environment with the help of objects and of categories of objects. Objects are cognitive symbols enabling societies to come to terms with the uncertainties and complexity of the real. This text begins by presenting processes of objectivation and of categorisation of geographical reality. Then, it analyses how far categorisation of objects influences the practice and the transformation of corresponding reality. Coping with categorisation and transformation, it thus circumscribes the interactions between language, cognition and action by which geographical entities are transformed. It illustrates this thesis with the historical transformation of modes of apprehension of the mountains in the West and the parallel transformation of their usage and the modes of planning applied to them.*

Key Words : geographical object, objectivation, category, action, mountains

Should Descartes be hung?

For a French-speaking author in an issue of an English language journal that aims to report on researches in cultural geography in Latin countries, to write an paper about the notion of object in geography is almost as an epistemological and linguistic challenge. Indeed, the French have the curious habit, which refers back to Descartes, to indicate by this term **things**, as small as a compass or as large as a continent, as well as **ideas** (or representations as in "object of desire") and also **subjects** (or finalities as in "the object of geography"). The French language thereby takes the risk of confusing the thing, its representation and what motivates the representation of the thing.

Should the French be sentenced to make a selection among their objects? Or should English speaking readers grant them mitigating circumstances? Should Descartes be hung for having given philosophical basis to the idea that the finality (subject) of science was to produce ideas (or representations) that were perfectly in conformity with things of the real world as they really are ? Let us leave the reply to quibblers and other moralists. It seems to be much more interesting here to work on the meaning of this confusion of objects, and to make explicit what it hides, in this case the very process of objectivation, that is to say the process by which a fragment taken from an experience of reality is given the status of an object. This paper aims to work on these cultural dimensions of objectivation through a main illustration: Mountains as a category of geographical objects in the Western culture¹.

Six statements shaping a framework of interpretation

Let's start by recalling, in the form of statements, the epistemological and methodological basis on which rests our reflection on objectivation and categorisation of geographical reality. Most of them are fairly well known since they have been adopted by many authors, even among geographers. But they are not necessarily shared by all. Therefore, in order to be correctly understood, we wish to open this paper with such a framework.

1) A cultural analysis of objectivation of geographical reality cannot rely on the thesis of naive realism, qualified as "metaphysic" by H. Putnam (1984), which "admits, without criticism, the existence of a world of material objects and of conscious subjects, in which knowledge is (...) conceived either as the direct grasping of things or beings that are different from the subject, or as a relationship analogous to that of a portrait and its model" (LALANDE, 1988, p 894). On the contrary, it will be postulated that the world is not made of *a priori* geographical objects that knowledge would have to discover, under the sometimes deceptive appearance of phenomena; it is made of "things" that the observer composes into objects and systems of objects within a process of knowledge building. "The object is, therefore, not objective as such" (COOLEY, 1926). It is a symbol, a "simulacra"² which enables one to construct, in a given system of given knowledge, a representation of the world as it appears and transforms itself. Objectivation indicates this process by which the real is organised into a system of objects considered as being exterior to the subject which *objectivises*.

2) Objectivation of spatial entities (places, territories, regions, continents, etc.) is a major operation in the construction of geographic knowledge, whether it might pretend to be scientific, religious, mythical or ordinary. These various forms of knowledge organize objects which can be the same or be different, depending on whether the modalities of knowledge building are shared (i.e. association of objects with relations of causality) or not (i.e. the instrumentation and the empirical validation which is very specific to the scientific knowledge) (CASSIRER, 1972). The objects have therefore different statuses according to diverse forms of very knowledge, even if they are sometimes indicated by the same words (city, mountain, suburb, etc.), even if it should also occur that the communication of knowledge within a society leads to a circulation of objets between divers systems of geographical knowledge.

3) The combined contributions of semiology, phenomenology and of pragmatic philosophy invite us to think that the process of objectivation cannot be understood outside its practical finalities. Each individual and each social group elaborates an intentional system of individualised objects according to criteria of affordance (GIBSON, 1979) and relevance (PRIETO, 1975). In a phrase that has become famous, picked up from his work notes, Saussure said that "it's the point of view that created the object", so signifying that the identification of objects are constructed according to their relevance in relation to a type of usage.

4) The work of social sciences that have adopted this conception of objectivation, have deducted that the latter was even a operation decisive for social organisation and for the action of societies on their environment. Symbolic interactionism, in sociology and in anthropology (BLUMER, 1969), thus suggests that the constitution of social groups proceeds by the attribution of shared meanings to of a common world of objects. Some

geographers have thus concluded that "the spatial arrangement of objects becomes relevant as a necessary condition and consequence of human action rather than a cause" (WERLEN, 1992, p143)³. The symbolic dimension of objectivation is not outside the action, nor of the intention; it represents a mode and a moment of both of them.

5) Objectivation is a complex cognitive process which mobilises very heterogeneous competences, notably the exercise of the senses. But one of the most important, for what concerns us here, is of linguistic nature : since language is the main vector of communication, an object and a family of objects get social existence only if they are individualised within a lexicon and incorporated to statements. For Ernst Cassirer language is a "mediator in the formation of objects (...) the mediator *par excellence*, the most important and most precious instrument for the conquest and for the construction of a real world of objects" (CASSIRER, 1969, p 45).

6) Objects are organised in categories⁴, according to rules of equivalence or relative analogy. Categorization points out the process by which, on the faith of previous experiences, social conventions and cognitive schemes, someone conceives a singular object as a type of object. This operation is a permanent feature of perception : "Each time that we perceive a thing as a kind of thing, we are categorising" (KLEIBER, 1990). It is also a logical and linguistic necessity : "we have only very few names and few definitions for an infinity of specific things. Resorting to the universal is therefore not a form of thought but a limit of discours. The tragic is that man speaks always in a general fashion about things that are always singular" (ECO, 1999, p 29). The geographical categories of which it will be question in this text, and that of "mountains" in particular, indicate the product of cognitive operations and of social interactions by which a social group structures and orders his environment by the adoption of a series of generic notions to which is referred all singular geographic phenomenon.

This set of statements and the global framework it shapes make possible a reformulation of the project of the present paper : first, it will identify some modes (designation, categorisation, analogical representation, etc.) and symbolic forms (objects, categories) of objectivation of geographical entities. Then, it will put these objects and categories into relationship with the practices and actions related to corresponding spaces and milieux. Thus we will argue that spatial practices and actions depend on the symbolic order sketched by the objectivation and strengthen it. From end to end, it will focus on the example of mountains, which have been the author's main object of interest for ten years. Therefore this paper can be considered as a short synthesis of a personal research program which already drove to the writing of several other papers mentioned in the bibliography.

Objectivation between phenomenal experience, nomination and conceptualisation

We started this paper with considering geographical objects as relevant symbols for apprehending the real that is filled with "things", but without objects *a priori*. This statement does not mean that the real is formless and homogeneous : it is assuredly heterogeneous, but this heterogeneity does not determinate the objects by which it will be apprehended. In these conditions, how can we think the part of the fundamental heterogeneity of the real in objectivation ? More generally, how can we think the respective parts of perceptual experience and of conceptualisation in the geographical categorization ? Let's enter the matter in analysing some early meanings of the word "mountain".

Mountains as a category of phenomenal experience

In French language⁵ the word has lastingly signified a landform which, in the distance, contrasts with the immediate environment of a social group located below : the “mountain” is conceived in a relative way, related to the place from which it is looked at, according to visible morphologic contrast it offers with that place. First of all, this kind of “mountain” results from a sensible experience of an environment.

This primacy of perception over all other mental faculties has led to call "mountain" or "mount" - for a long time both terms have been indifferently used - entities of which the characteristics seem to us to be very heterogeneous : the *Montagne Sainte Geneviève*, a modest hill south of medieval Paris; the high altitude pastures situated well above the Savoy villages; the edge of a plateau in the distant landscape of Burgundy or of Languedoc that the peasants of the plain visit only occasionally for hunting; etc.

This acceptation of the notion of "mountain" subordinates the naming to a specific landscape context : what inhabitants of cities such as Lyon or Torino, would call “mountain” – the Alps for example as seen in the distance - according to the general shape of their environment, might be a totally inappropriate designation for people living in the alpine valleys. For Savoyard peasants, “mountains” are the pastures located much higher. The appearance of a limestone plateau which faces the city of Reims justified the expression "Mountain of Reims" used by the inhabitants of the city; but the expression is irrelevant for the inhabitants located on the plateau itself. In this first conception, the notion of “mountain” enables individuals situated in a place on the surface of the earth, to identify in the distance a landform and confer to it the status of object on the criterion of its appearance from this place. The category rests firstly and above all on a shared experience of a phenomenon, even although the objective content is relative and imprecise.

Mountains as elements of cosmogonical structure

A second conception can be opposed to this first one, even if both of them are very ancient and long lasting, having numerous traces from Greco-Roman antiquity right to the heart of the modern era. This second conception sees mountains as manifest signs of an organisational principle of the cosmos. In this perspective, mountain ranges are apprehended as equivalent, for the earth, of the skeleton for the human body, or of the framework for a building, that is to say the rigid architecture which guarantees the solidity of the whole. If these conceptions has got a purely metaphorical meaning since the 18th century, it must be reminded that they are taken literally during earlier centuries, notably in the Arab-Islamic geography of the 10th and 11th centuries and in the late middle ages in the West (MIQUEL, 1980).

According to this conception, objectivation of mountains is not determined by an experience of the senses *in situ* and the need to make differences between *here* and *there*, *us* and *them*. It is conceptual, subordinated to a vision of the world that determines their function. From then on, the *in situ* experience is of little importance in the process of objectivation of the thing compared to the experience of the representation of the thing. As a matter of fact, these cosmogonical visions rely on maps or on globes which give form to these systems that are supposed to cross the Earth. Objectivation then has recourse to the mediation of representation, that is to say to the production of an image by which one could visually experience the conception that motivates it.

The juxtaposition of these two ancient conceptions of the notion of "mountain" shows, if needed, that there does not exist a consensus on the meaning of the word. Moreover it shows, that each of these two meanings respond to incommensurable cognitive needs with the help of different cognitive procedures : symbolic organisation of the perceived elements of a local environment for one; production of an intelligibility of Earth at a global scale, thanks to cartographic representations, for the other.

Starting from this example, we suggest that early modern objectivation and categorization of geographical "things" rely on two dimensions: first, the experience of phenomenon which requires presence in a place; second, a global vision, either cosmogonic when oriented toward the production of natural knowledge, or ethnocentric when oriented toward structural differentiation between We/Here and They/There.

Categorisation as a process of geometric and semantic rearranging of the modern geographical world

During the 17th and 18th centuries, the notion of "mountain" experienced a semantic evolution which took part in a new way of apprehending nature and space. The requirements of classification took on importance in scholarly thought, with the double objective of producing clear differentiation of terrestrial surfaces and univocal conception of relationship of their characteristics. The renewed notion of "mountain" took a important part in this process. It even became a remarkable illustration of it.

The natural and political worlds as puzzles

Atlas and Geographies, that multiplied from the 17th century, put into work and into image a conception of terrestrial space as a puzzle. European space tended to be apprehended as the more and more adjusted juxtaposition of territories which prefigured the forthcoming Nation-States. This conception begun also to be adopted at the scale of the world due to colonization. Modern States and territories were founded on a conception of terrestrial space which required that the corresponding space should be fragmented into entities capable of circumscribing an increasing number of social and political objects : sovereignty, policies, authority, nation, etc.

This conception prevailed also in the scholarly interpretation of the natural world. Renouncing a naturalist hermeneutic of Christian inspiration which considered natural elements as as many signs of the divine (FOUCAULT, 1996), the naturalists adopted methods of systematic comparison of these phenomena, often making reference to classification, to arithmetic measures and to observation of details. Natural knowledge, from now structured in "*tableaux*", proceeded by identification of similarities and of differences, according to a binary logic which led to think that an object or a place is concerned by a sole category.

Two centuries later, in the light of new epistemologies born notably from discovery of quantum physics, this way of thinking the world as a system of juxtaposed and interlaced objects, led the French philosopher Michel Serres to a criticism of the "theory of boundaries and markers" (1980). In that way, he pointed out spatial objectivation that favoured the identification of "hard" and juxtaposed objects to the detriment of flows and circumstantial or evanescent forms, such as clouds or smoke.

The mountain as a category of "hard" and "bounded" objects

The status of mountains as objects of knowledge finds itself influenced by this vision of the natural world and of geographical space. The 18th century consecrated the decline of "theories of the earth" which had conferred a philosophical, if not scientific, status to mountains. Reflections on the formation of mountain ranges were neglected in favour of the work of geographers and naturalists who aimed, for the former, to understand the principles of their location, for the latter to empirically analyse their intrinsic characteristics (BROC, 1969; DEBARBIEUX, 1989). For both, the mountains were actually conceived as physical things, to be distinguished from other categories of physical things (mainly plains, plateaus and cities). However, it is paradoxical that none of the then proposed definitions were satisfactory according to indisputable principles. The object is desired, but escapes logical forms of determination.

The scientific knowledge about mountains was mainly organized according to the notion of altitude : the adoption of a universal reference (sea level) and of instruments and techniques of measurement, made possible the attribution of altitude to every place ; it also made possible the confrontation of this quantity with those obtained by all other means of measurement (air pressure, temperature, but also those concerning local societies, such as the rate of cretinism) and qualitative field observations (nature of plants, presence of ice and of summer snow, etc.)

In these conditions, in spite of the absence of satisfying rational definition, it is not surprising to note that some altitudinal values (i.e. 800m, 1000m and 1000 feet) were adopted to circumscribe mountains. Not that the delimitation should be a scientific necessity as such, a condition for the carrying out of researches of the period ; but because it gave credence to the idea that every mountain was an object which, according to this criterion, should have "edges", even if these latter were not obvious on the spot. This method also presented two advantages : easy to carry out as soon as the techniques of measure were controlled, and easy to map. In a late attempt to define the mountain, French geographers wrote, to justify their concern of determination : "the head of the mountain shines like a bright light, but its foot loses itself in the haze of the plains and it is for man to add the preciseness that lacks for nature" (VEYRET, 1962, p 35).

According to the tremendous rise of natural history, mountains became one of the categories by which scientists proceeded to a systematic division of the surface of the earth. This concern of dividing natural surfaces matched, as we have already mentioned, that of modern States, even, if the latter referred to mountains in a different way : for modern States, mountains have been a major figure of these "natural borders" which help the drawing of a majority of international borders in Europe from the middle of the 17th to the beginning of the 20th century.

Singularising the contents of categories

The second principle by which mountains were apprehended according to modern conceptions is their association with categories of specific attributes. We saw earlier that the measurement of altitude, instituting mountains as physical and "hard" objects, made possible the search for correlation between altitude and several other phenomena. The constitution of mountains as subject of science proceeds less by logical definition of the related objects themselves than by identification of characteristics and of combination of such enabling qualification of portions of space called milieus, systems or regions, according to concepts in use in the various disciplines and in different periods of time.

The main part of the corpus of 18th century natural history and of the 1810-1940 geography illustrates such a quest, sometimes orientated by the search for regularities at the global scale (as for climatology or Humboldt's botanical geography for example), sometimes motivated by the analysis of local singularities (as in French regional geography).

Such a quest for regularities and differences introduced by the distribution of altitudes motivated the invention of "mountain people". This social object is the equivalent in the analysis of societies of the natural mountain phenomena (level of vegetation, type of climate, etc.) : their common designation illustrates the redundancy of morphological and socio-cultural entities. The "mountain people" finds itself thus typified and related to the natural object that spatially coincides with him. From then on, it can be understood as being a product of scientific curiosity of the 18th century, to which is added the awakening of pre-romantic sensitivity and the needs of natural philosophy : the preoccupation of this latter, remarkably incarnated in the work of Jean-Jacques Rousseau, institutes the mountain as a category, not only of the physical and social worlds, but also moral and aesthetic. The extraordinary success of this imaginary, relayed with effectiveness by literature of travel and tourist guides of the following centuries, has largely contributed to the diffusion of this concept of "mountain", well beyond the circle of scholars where it had been elaborated.

The insertion of differentiated categories in narratives

Complementary to this "horizontal" differentiation of geographical objects and "vertical" specification of their semantic contents, is the creation of relationships between the categories which, beyond the typological differentiation, subordinates them to narratives and myths (DEBARBIEUX, 1999). The scientific writings from the 18th to the beginning of the 20th centuries, just as the painting of landscapes with an anti-modern smell and philosophical writings, think of mountains or of societies that live there on an historical or genealogical mode.

The narratives, highly contradictory, see mountains sometimes as the place of the origin of the world (the oldest part of the earth's crust, the origin of human beings), sometimes as the milieu of harmonies endangered by progress and by the industrial revolution, sometimes as a recent and contingent avatar of natural history (theories of the 19th century about the "rising" of the mountains, of the re-conquest of vegetation following the great ice ages), sometimes as the context where the modern hero can express his modernity in surpassing himself. As well as representations of other categories such as "cities", "countries" or "nature" (SHORT, 1991) "water" and "woods" (SCHAMA, 1995) to which they are closely related, the representations of mountains have been constantly submitted to the intelligibility of the narratives through which they have been thought.

From the 17th century, the objectivation of mountains and other geographical objects thus combine the drawing of contiguous entities, attention to the effects of milieu which singularise the contents and the subordination of the whole to the elaboration of several great narratives, those of natural history and the history of humanity. It anticipates in the modern vision of nature and of society of which it constitutes a particularly relevant illustration.

Social adjustment of systems of objects and transformation of cultural identities

In shaping a new status to the notion of "mountain", the European elite has contributed to the renewal of the vision of the world of their contemporaries. But they have also renewed the social conventions by which individuals and groups agree on shared representations of their

geographical environment, practice this environment and think of themselves in relation to these representations. For the objects and the categories are not only elements of geographical knowledge, terms whose relevance and justification would lie in the pure abstraction of knowledge. They constitute practical operators for social relations as well as for land planning, two topics that will be treated successively in the last two parts of this text.

Science and "bricolage" in various conceptions of the category

Indeed, in conferring to mountains the status of geographical entities, susceptible to be delimited and mapped, in subordinating it to a type of description which intends to be independent of the observer and of the place of observation, 18th century scientists have proposed a strong alternative to the ordinary pre-existent conception. Because the criteria were renewed, some places considered as being mountains in popular knowledge could not fit the category anymore. Thus a quantity of modest landforms, such as the "mountains" of the Paris basin, or foreign to every process of orogenesis such as Ayers Rock in Australia, as well as Savoy mountains strictly defined by their pastoral use, have been removed from the scholarly category. Generally speaking the ordinary conception of mountains was disqualified⁶ : "Every day language alerts us of troublesome uncertainties... what is in common between a mole hill and a great summit ? The words mount, mountain, which indicates such dissimilar things, lack the most elementary precision... These words have come too early, when the cradle of French language ignored real mountains and when none felt the need to place an order of magnitude among the bumps on the earth's surface" (VEYRET, 1962, p 5)

Today the very large diffusion of scientific knowledge in western societies has led to the adoption, consensual enough, of the naturalist conception of the extension of the category and of the nature of objects which compose them : when they speak of mountains, Westerners point out almost the same objects; when they refer to so-called "mountains" named according to a pre-scientific meaning, they know how inadequate to modern standards these names are. But the corresponding category, nevertheless, has not necessarily acquired constant and unequivocal semantic contents. Indeed, social usage of the category have associated it with terms (facts, values, etc.) which, to use a distinction proposed by Umberto Eco (1999), do not belong to its dictionary meaning (which fixes, by a logical and systematic path, the position of an object in a system of classes and oppositions) but to its encyclopaedic description (which corresponds to the sum of knowledge recognised as being valid by a social consensus that is not necessarily logical, concerning and object). That means that in adopting the naturalist conception of mountains, western societies have decked it out with heterogeneous conventional representations (place of recreative practices, wilderness, context of aesthetic experiences, etc.). Doing this, they have produced a social knowledge whose structure is closer to what Levi-Strauss (1962) called "*bricolage*" than to what is expected in a rational and scientific description. We will examine later on the practical consequences of this proliferation of meanings of this category.

The metamorphosis of referents endowing identity

The social effects of categorization of geographical objects do not limit themselves to the stakes of knowledge and of semantics. Concerning inhabited and used spaces and places, their qualification reacts, by effect of feedback of categorisation (HACKING, 2001), on the qualification of their inhabitants and of their users. As long as mountains were conceived after phenomenal experience, a motif of fundamental otherness, no individual, no social group found

itself qualified by it. But as soon as it is conceived as a spatial entity in itself, essentially from the 18th century, as soon as it makes of the individual or groups who live there "mountain people", the naturalist category induced a social categorization and introduced renewed modes of social differentiation.

The history of European mountains has been crossed by a complex system of transformation of identities. This system has been mainly based on a couple of social stereotypes (POCHE, 1996) : that of the citizen (tourist or developer, "*mountaineer*" by choice, if he has got a quite impressive list of ascents) and that of the inhabitant of the place ("*mountain man*" by destiny, whose image is tainted by cultural archaism and by naturalism). The symbolic resources of natural attributes for building social types were very similar to those of biological ones (gender, race, etc.), the daily environment, as well as the most evident corporal attributes, appearing to be very convenient for the identification of individuals and of social categories.

The process of adoption by minority groups of characteristics that are attributed to them, well known to sociologists, occurred for several so-called mountain people during the 19th and 20th centuries. It happened very early where the figure of mountain dwellers is glorified - as in Switzerland and in Austria. Since then, a major part of the inhabitants of European mountains, as described by naturalists and geographers, have eventually claimed the name of "*mountain people*" with certain associated values, up to the point to cultivate, at least in public and in their daily environment, the appearances and behaviour expected by those observing them (POCHE, 1996). The category of "mountains", just as for the "city" or the "countryside", has then shown itself to be a very efficacious operator of social differentiation and of reconstitution of cultural identities within our modern societies.

Systems of objects and systems of actions: the geographical categories as normative factors

The capacity of geographical categorisation to influence the process of social differentiation and distinction, has its prolongation in the active transformation of the material world. Indeed, the transformations of geographical reality are guided by the expectations that contain the systems of objects that one acquires in order to grasp and configure that reality. For developing this point, it is necessary to remind that objects result of two processes: first they are naturalized, located in the objective world; second they obey the criteria of pertinence and intentionality.

Since they are naturalised, geographical objects are apprehended as imposing themselves in the experience : "we do not experience the world as the total of data given by the senses, nor as an aggregate of things, isolated from one another, without any relationship between them. We do not see coloured patches and contours, but rather mountains, trees, animals, especially birds, fish, dogs, etc."(SCHUTZ, 1976, p125). This immediate apprehension - without conscious mediation - of objects as items of their respective category is subordinate to the expected contents, those of the category itself.

Since they are intentional and pertinent, geographical objects are always related to practices and projects. The production of systems of objects guides the action and is, at the same time, motivated by it. Each of these objects, once indicated and circumscribed, once referred to a particular category, constitutes a "horizon of expectation" (RICOEUR, 1985) which orientates the users of the given object when acting on this object.

Apprehended in this way, the intentional transformation of the material world is comparable to a normative process aiming to conform a pre-identified object to the expectations that it evokes, as an item in a category. Ideologies and models of actions dwell within objects through

their encyclopaedic description and orientate concrete practices of them. To deepen this question with our mountain illustration, we will successively focus on two different aspects : that of public policies and that of landscape planning.

Mountains as a political objects

A geographical category may or may not be an object of public policies. Getting a political status for a geographical object depends on the singularity that is recognised for it and on collective will. The city became an object of public policy when the fear that it might no longer weave social links began to stir. The mountain became so when modern societies began to diagnose, through experience of their own mountains, signs of social and ecological imbalance threatening economic and collective values (territorial equity, equal access to public services, natural harmony, etc.).

Such a process began with policies of reforestation conducted in Europe from 1850's so as to prevent floods that were increasing in the surrounding plains and valleys. It was continued with the first protected areas in the United States (Yosemite, Yellowstone) then in Europe (Swiss Engadine, Italian Grand Paradiso, Spanish Ordesa) aiming at extracting some emblematic landscapes from artificialisation and modernization. But though they mainly concerned places situated in mountains, and they are based on generic characters of the category (the mountain as water reservoir on the one hand and as landscape model on the other), these two policies did not have systematic application to all occurrences of the category.

Such an strict adjustment of policies to mountain areas occurred during the second half of the 20th century. Between 1940's and 1970's, several European countries adopted measures aiming at maintaining mountain agriculture in the name of social solidarity and of economic fairness, mountain farmers needing financial help for being able to produce competitive products. Because of ambition to be systematic, these measures necessitated a zoning, that is a clear delimitation of all of the mountains of the countries concerned. From then on, the question of mountain limits, for a long time specific to scientists eager to map natural objects, became a political and administrative one. Simultaneously, the characteristics of mountain agriculture which had been part of an informal knowledge, highly relying on modern stereotypes, became a political stake: what kind of production should be subsidized ?

Complementary to these sector-based policies, global policies underlining the social, territorial and environmental singularity of mountain regions were adopted in several countries (Switzerland, France, Austria, Italy, etc.) from the 1970's to the 1990's. With these two generations of public policies, the objectivation of mountains aimed at regulating by territorial approaches the social and economical systems. The relevance of this kind of objectivation, which is ideological (national solidarity, search for social cohesion through a differentiated treatment of territories, right to cultural difference, conservation of heritage) does not share much with the scientific one, which is strictly motivated by scientific classification of natural objects and, theoretically free of ideological concern. However, the majority of these policies have been conceived and evaluated with scientific expertise - which is a source of ambiguity and misunderstanding since the relevance of objects highly differs (DEBARBIEUX and LANDEL, 2003).

A comparative analysis of this entry of mountains into politics in the 20th century shows that the countries the most concerned were those for which the cultural and economic contrasts between regions were considered as problematics from the point of view of social equity and

national cohesion (Italy, France, Spain, Switzerland, Austria). As opposed to countries for which this type of ideological motive for public politics are secondary, or those for whom the category of mountain is not considered as being relevant in formulating diagnostics, or proposing corresponding correctors (USA, Canada, Germany, United Kingdom, etc.)

The normativity of land planning

For tackling the whole array of questions listed in our initial project, it remains for this paper to question the concrete and material effectiveness of these geographical categories for which we have presented the origin and the structure. This dimension was suggested in the preceding paragraphs if public policies are believed to have effectiveness in spatial practices and forms of planning. As a matter of fact, agricultural policies conducted by several European States and by the European Union in favour of mountain regions have helped maintaining exploitations, upkeep of landscapes and promoting specific markets. In doing so, they have contributed to maintain the relevance of some elements of encyclopedic descriptions (related to tradition, to heritage, to the quality of products) of the category. In the same way, mountain milieus are those which benefit from the highest proportion of protected natural landscapes : quantity of activities and of developments, considered as being threatening for the quality of landscape and environment, have been either forbidden or controlled ; this reserve reinforces the natural character of these mountains which has been associated to them since the 18th century.

But beyond the effects of specific public policies, this adjustment of practices to encyclopaedic contents of the category is also realized through numerous operations, sometimes of very modest scale. Let's simply think about tourist architecture : Mountain sports and recreation, parting from its initial, alpine foyer, has spread around the world, carrying some architectural models (the Swiss chalet and the Tyrolean style of ornamentation of facades) with them. The landscape of numerous North American resorts has been thus marked by the imprint of this model (DEBARBIEUX, 1995).

A specific example, though very modest in size, illustrates quite well this process of adjustment of a place to the expectations motivated provoked by the category it belongs to. It concerns the uses and planning of the "mounts" and the "mountains" of the area located between New York City and Montreal, on each side of the Hudson valley and Champlain Lake. Mount Royal, a modest hill according to present terminology of geographers, located on the northern edge of the emerging Canadian city, had been for long called "the Mountain" by Montrealers. Indeed, its presents an impressive topographical contrast with the city. Commissioned in 1874 to draw a public park on its very top, F.L. Olmstead decided to interpret literally the usual naming of the place : "You have chosen to take a mountain for your park, but, in truth, a mountain barely worthy of the name (...). Yet, whatever of special adaptation it has to your purpose lies in that relative quality. It would be wasteful to try to make anything else than a mountain of it" (OLMSTEAD, 1881, p 42). He designed a park explicitly inspired by the canons of Alpine landscape as codified by Wordsworth and Ruskin, and by scientific knowledge, notably concerning the levels of the vegetation that he simulated by importing "from the Alps and Siberia" several species of trees (DEBARBIEUX, 1997).

This same landscape architect had already used such mountain references in the conception of Central Park in New York. This symbolism, incarnated in a collection of artefacts (rocks, winding trails, points of panoramic views), has been reused in the development of several private parks situated on the banks of the Hudson, and explicitly instituted as landscape model in several state parks of the region, notably in the Bear Mountains, the Catskills and the

Adirondacks : the first mention of a project concerning this latter project dates from 1864, in an article of the *New York Times* suggesting that one should develop there a "Central Park for the world". From then on, these "mounts" and "mountains", sometimes modest, sometimes considerable, present similar characteristics (high decline of traditional uses, high forest coverage, attention in management policy to the quality of landscape, presence of tourist equipments) whereas previously they had known very heterogeneous economical and environmental histories (agricultural activity progressively abandoned as in the Catskills, forestry and mining exploitation, absence of valorisation as in the majority of the Adirondacks, etc.). Starting from the late 19th century this convergence of the very nature of so-called mountain areas comes indeed from their common objectivation (DEBARBIEUX, 2003) despite their deep heterogeneity.

Conclusion : the geographical effect and the resistance of the real

This paper, starting from some fundamental propositions, aiming at circumscribing and framing a problematic of objectivation in geography, has then taken the risk of straying into the mountains of the world to draw necessary illustrations. There remains the need to return to the point of departure and to expose the lessons that one can draw from this illustration in a general perspective.

- Contrary to what the permanence of the term might imply, the word "mountain" does not indicate a precise and stable domain of discursive practice concerning nature and landscape : we have argued that, behind this word, various conceptions have succeeded one another, each one being a combination of patterns of perception, of visions of the world, of projects of knowledge and of action. From then on, because of its capacity to motivate different types of social conventions at work in the apprehension of the real, and to underline different human types considered in their variable relationship with the object, mountains can be considered as much a category of the social as much as the naturalist domain. The mountain, as for all geographic categories, in such a perspective deserves to be considered as a figure of social institution of the natural world.
- The "mountain" category refers to the material world for which it proposes an intelligibility. But it also leads to this material world according to the "horizons of expectation" and the motives of planning that it contains. Therefore, this category, as well as many others, constitutes a mediation of the continuous institution of geographic reality⁷.
- However, one must not retain from the preceding statement that reality is strictly made to be conform with arbitrary symbolic imperatives. This interpretation, highly idealistic, does not fit the basis of this work for two reasons. On the one hand, we have underlined the role of perceptive experience *in situ* in the process of objectivation. On the other hand, the real sometimes resists the objects by which one apprehends it : several ski resorts, created from the 1960's through European, American and Australian mountains accordingly to common images of mountain in our civilization, had to close when climatic conditions appeared to be unequally favourable. The Olmsted-made belts of vegetation introduced on Mount Royal slopes did not last since no climatic variations exist between the bottom and the top of this "mountain". Though imposing no pattern of thinking, the real frames the setting out of systems of objects and systems of action.

- It would be more relevant to conceive the relation between symbolic categories and the real to which they refer in terms of adjustment : adjustment of objects of thought to concrete experiences of reality and practical needs of societies; adjustment of actions to motives of objectivation ; adjustment of reality to the contents of categories through human actions ; adjustment, in time, of objects to the biophysical processes of the material world. In an recent work (DEBARBIEUX and FOURNY, 2003), we have proposed to call "geographical effect" this tension between the real and objects by which one apprehends it: tension between, on the one hand, a group of actions aiming to conform reality to the idea related to categories by which one apprehends it, and on the other a group of transformations totally independent from the human will and sometimes not perceptible, which causes the referent of the object to evolve, in the sense that can be expected or feared. The geographical effect inscribed in putting under tension these intentions, these actions and the processes which, all together, configure and denature at the same time the objects from which geographical space is made. The Swiss theoretician of the city, André Corboz, proceeds to an similar acknowledgement when he writes "a scientific object does not extricate itself as an embedded sculpture; it is constructed by a series of operations where the reality and the researcher interact with intensity. And what is reality ? It is what resists (to scientific action), that which hides (from the question of researchers), but it is also that which changes the status during the path which aims at knowing it... In other terms, all take place as if the searcher arrived, at a certain moment in his path, to let himself be manipulated by the object, as though the object were capable of initiative" (CORBOZ, 1997, p24). It is not surprising to see that mountains and cities, so often treated as antagonist categories, rejoin when considered not as real things but pieces of modern knowledge.

Bibliographie

BERQUE A. (1990) *Médiance : de milieux en paysages*, Montpellier : GIP Reclus

BLOCH M., 1998, *How we Think they Think ; anthropological approaches to Cognition, Memory and Literacy*, Westview.

BLUMER H. (1969) *Symbolic Interactionism, Perspective and Method*, Berkeley, University of California Press

BROC N. (1969) *Les montagnes vues par les géographes et les naturalistes de langue française*, Paris, CTHS

BRUNER J. (1956) *A study of thinking*, New York, Science editions

CASSIRER E. (1969) « le langage et la construction du monde des objets », in *Essais sur le langage*, Paris, Minuit, (from the German original edited in 1933)

CASSIRER E. (1972) *Philosophie des formes symboliques*, 3 tomes, Paris, Minuit (from the German original edited in 1924, translated in English *The philosophy of symbolic forms* in 1955 by Yale University Press)

COOLEY Ch. H. (1926), "The roots of social knowledge", *The American Journal of Sociology*, vol 32, 1, pp 59-79.

CORBOZ A. (1997) *Le territoire comme palimpseste et autres essais*, Besançon, Editions de l'Imprimeur.

DEBARBIEUX B. (1989) - "Les statuts implicites de la montagne en géographie", in "Quelle spécificité montagnarde ?", *Revue de Géographie Alpine*, tome LXXII, n° 1-2-3, pp. 279-292.

DEBARBIEUX B. (1995) *Tourisme et Montagne*, Paris, Economica

DEBARBIEUX B. (1998) "The mountain in the city : Social uses and transformations of a natural landform in urban space", *Ecumene*, vol. 5, number 4, pp. 399-431

DEBARBIEUX B. (1999) "Figures combinées de la ville et de la montagne. Réflexion sur les catégories de la connaissance géographique", *Revue de Géographie Alpine*, tome 87, n° 1, pp. 33-49.

DEBARBIEUX B. et GILLET F., dir. (2002) *Mountain regions : a research subject ?* Bruxelles, Editions de la Communauté Européenne

DEBARBIEUX B (2003) « Similaires et pourtant si différentes : désignation et aménagement des « montagnes » autour de New York et de Montréal » in DEBARBIEUX B. et FOURNY M.Ch., dir. (2003) *L'effet géographique : Construction sociale, appréhension cognitive et configuration matérielle des objets géographiques*, Grenoble, Editions de la MSH, pp 197-220.

DEBARBIEUX B. et FOURNY M.Ch., dir. (2003) *L'effet géographique : Construction sociale, appréhension cognitive et configuration matérielle des objets géographiques*, Grenoble, Editions de la MSH.

DEBARBIEUX B. et LANDEL P.A., dir., (2003) *La montagne entre sciences et politiques*, Grenoble, Dossiers de la Revue de Géographie Alpine, n°22.

DURKHEIM E. et MAUSS M. (1901-1902) « Essai sur quelques formes primitives de classification », *L'année sociologique*, 6, pp 1-72

ECO U. (1999) *Kant et l'ornithorynque*, Paris, Grasset (from the italian original edited in 1997; translated in English in 1999 : *Kant and the Platypus*, London, Secker and Warburg).

FOUCAULT M. (1966) *Les mots et les choses*, Paris, Gallimard (translated in English in 1973 : *The order of things. An Archaeology of Human Sciences*, New York, Vintage)

FRADIN B., QUERE L. et WIDMER J. dir. (1994) *L'enquête sur les catégories*, Paris, Editions de l'EHESS

GIBSON J. (1979) *The ecological approach to visual perception*, Boston, Houghton Mifflin

HACKING I., 2001, *La construction sociale de quoi ?*, Paris, La Découverte (from the English original edited in 1999 : *the social construction of what ?* Harvard University Press)

KLEIBER G. (1990) *La sémantique du prototype*, Paris, PUF.

LALANDE A. (1988) *Vocabulaire technique et critique de la philosophie*, Paris, PUF, 16^e édition.

MIQUEL André (1980) *La géographie humaine du monde musulman jusqu'au milieu du 11e siècle*, EHESS, Paris.

OLMSTED F.L. (1881) *Mount Royal, Montreal*, New York, Putnam and sons

POCHE B. (1996) *L'espace fragmenté: éléments pour une analyse sociologique de la territorialité*, Paris, L'Harmattan.

PRIETO L. (1975) *Pertinence et pratique. Essai de sémiologie*, Paris, Minuit

PUTNAM H. (1985) *Raison, vérité, histoire*. Paris, Minuit (from the English original edited in 1981 : *Reason, Truth and History*, Cambridge University Press)

- RICOEUR P. (1985) *Temps et récit*, Paris, Seuil (translated in English in 1988 : *Time and Narrative*, Chicago University Press)
- SANTOS M. (1997) *La nature de l'espace*, Paris, L'Harmattan
- SCHAMA (1995) *Landscape and Memory*, New York: Alfred A. Knopf
- SERRES M. (1980) *Hermès V, le passage du nord-ouest*, Paris, Minuit
- SHORT J.R. (1991) *Imagined country: society, culture and environment*, London: Routledge
- VEYRET P et G. (1962) « Essai de définition de la montagne », *Revue de Géographie Alpine*, Grenoble, p 5-35
- WERLEN B. (1992) *Society, action and space*, London, Routledge.

¹ But here again, translation is tricky : when the French use a singular name - « la montagne » - for pointing out the category, English-speaking persons use the plural of the items of the category – « mountains ». Indeed, cross-cultural communication is a treacherous path, but a living proof of the relevance of the question we are rising in this paper

² According to Cassirer, we owe to Heinrich Hertz this idea that knowledge produces " symbols or internal 'simulacra' of external things so as the logical consequences of these symbols are the images of the necessary consequences of the natural entities of which they are representations" (CASSIRER, 1972, 15).

³ Milton Santos expresses something similar when he writes : « Space is made of two contradictory and inter-dependant systems of artefacts and actions... Systems of actions cannot be studies separately from systems of artefacts" (SANTOS, 1997, p 44)

⁴ The word « category » does not refer here to the meanings that several major authors, from Aristotle to Kant and Durkheim, gave to it, related to the conditions and modes of description of a reality. Following recent authors (BRUNER, 1956 ; FRADIN, 1994 ; ECO, 1999), we will define it this way: it is a set of objects, potentially very numerous, associated according to a set of formal criteria of equivalences, or to unformal similitude with an ideal-type or a prototype.

⁵ When focusing on American and North-African environments, our researches have shown that it was the same in English or Arab languages.

⁶ Forms of such a confrontation of ordinary and scientific categories was the main feature of the scenario of a recent film : « the man who climbed a mountain and got down from a hill ».

⁷ We borrow the expression from Louis Quéré (in FRADIN, 1994) adapting it to the type of category and reality we have been working on in this paper.