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Alexandra Baudinault

Electronic version

URL: <https://journals.openedition.org/rga/3443>

DOI: 10.4000/rga.3443

ISSN: 1760-7426

This article is a translation of:

« Relief » et « montagne » : les enseignants de l'école élémentaire confrontés à la mise en mots et en images de la saillance - URL : <https://journals.openedition.org/rga/3417> [fr]

Publisher:

Association pour la diffusion de la recherche alpine, UGA Éditions/Université Grenoble Alpes

Electronic reference

Alexandra Baudinault, ““Relief” and “Mountains”: Primary School Teachers Confronted with Discursive and Visual Framing of Salience”, *Journal of Alpine Research | Revue de géographie alpine* [Online], 104-2 | 2016, Online since 29 September 2016, connection on 08 December 2022. URL: <http://journals.openedition.org/rga/3443> ; DOI: <https://doi.org/10.4000/rga.3443>

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"Relief" and "Mountains": Primary School Teachers Confronted with Discursive and Visual Framing of Salience

Alexandra Baudinault

Introduction

"This drawing is a simplified representation of the earth-surface relief, that is to say, all the humps, hollows, level areas, etc. It displays 4 successive **views (in French: plan)** from the foreground to the background. Each view or 'plan' represents a major type of relief shape: plains, hills, plateaus, mountains." (Blanc, 1982)

"Relief: the humps and hollows at the surface of the earth; a mountain: a type of relief, like a *"hump" of more than 600 m. high.*" (Le Callenec, 2012)

- 1 These are quotes from schoolbooks for pupils of years 4 to 6, aged 8 to 11. In these extracts the words "mountains" and "relief" are always associated and "humps" and "hollows" which are always used to characterise "mountains" and "relief". There is a thirty-year gap between the first and the last two quotes, which reveals that the way these geographical notions are defined has endured throughout the years. These two words will be at the core of this article.
- 2 Why? First because both pupils and their teachers usually associate these two terms and consider them common. Mountains are the most outstanding example of the salience of relief: they are higher than any other geographical shape so they permeate in pupils' spatial imagination and in their teachers' who thus express what relief is through the mountains and their prototypal status. Yet, these two terms are defined in a way that is very imprecise, ambiguous and changeable from one geographer to another and according to the regions of the world with their geography traditions. This is how Bernard Debarbieux (Debarbieux, 2003) starts his definition of "mountain" in

the *Dictionary of geography and space of societies* ("A mountain is a salient form of relief characterised by altitudes, shapes and volumes which are conventionally agreed on but differently from one context to the other.) but he goes on saying that "despite numerous attempts, definitions remain very imprecise." In the same book, Hervé Regnauld (Regnauld, 2003), author of the definition of "Relief", associates the term straight away to geomorphology which is defined as "the science of relief" and he questions both the imperfection of the concept and its blurry nature for geography (but not for geomorphology or geologists). Besides, the references he gives at the end of his article include the following words: "shapes, geomorphology, mountain, physical (geography), earth sciences (geography and), earth, topography." This list therefore associates "relief" and "mountains" almost *naturally*, as pupils do in their mental conceptions of space and as teachers do in their geography classes.

- 3 In this article, I have therefore chosen to analyse these two words and their various uses in class in primary schools to raise the question of how teachers take these two geographical objects on today. How do teachers integrate these notions in their geography lesson plans? How do they manage to define these notions and go beyond their global meaning? What choices are made by teachers in their classes, by schoolbook authors, by teacher bloggers in order to express and show salience to pupils who only get to know salience through mediations, most of which out of school and in a touristic context (holidays in the mountains, striking advertising pictures, youth albums, cartoons)? After a presentation of the material and methods involved in my research, I will describe and analyse a session in an ordinary year-5 class as well as some pedagogical material used in class. The aim is to bring to the forefront the difficulties teachers and their pupils face, which I believe reveal the contradictions of a circulation system of geographical knowledge that is closed and ever wavers between tradition (by the endurance of the notions taught and the paradigm where teachers find themselves) and innovation (mainly pedagogical through questions, classroom activities, and the staging of knowledge). Lastly, I will try discuss the various propositions to get over this deadlock.

Methodology

- 4 To answer these questions we will base our work on the following supports:
- 5 **A corpus of schoolbooks¹ (from year 4 to year 6: CE2 to CM2 in the French system) composed of:**
 - Recent schoolbooks matching the latest curricula and legal texts issued by the French Ministry of Education to implement the new curricula (BO (Official Journal) de 2008²; progressions in 2012³; recommendations in June 2014⁴)
 - Older manuals. The choice of the latter was made in the context of my PhD thesis (in process). The schoolbooks I am analysing here are in the library of geography of a primary school teacher in charge of year 5 classes in Paris since 1979. This is why there is no reference prior to this date and this will be my starting point. Besides, the list of these references is not meant to fully represent the bibliographical landscape but rather to shed light on how professional memory in a certain school subject builds up. The selection is none but the teacher's and is therefore is necessarily subjective, random and accumulated along her experiences, or on meeting people. Some schoolbooks, those edited by Hatier and the files "Hachette" are used by the pupils in the class group. No recent schoolbook (edited

after 2008) was bought in large numbers for each pupil. The more recent schoolbooks (2010 to 2014) are used by the teacher as teaching resources to prepare her classes.

- 6 **A set of digital resources: forums, websites and blogs⁵.** Teachers, especially beginners, but not only, gradually use the Internet more and more often and visit the numerous teachers' blogs where the latter share the resources they elaborate for their pupils (Charpentier, 2014). While the plan seems to be less formal than that of a schoolbook (individual initiatives that are unchecked by an editor or the education authorities), it is yet as much, if not more a type of discourse on the geographical objects taught in school. The collaborative and participative character of these sites (users' comments, for example on the suggested resources; method swaps in discussion groups) is, to my mind, a relevant data resource to take into account to analyse how a discourse and pictures on the mountains are elaborated in class.
- 7 **Material drawn from a participative observation in a Year-5 class (CM1)** in Paris during schoolyears 2013-2014 and 2014-2015. Throughout these two academic years, the concepts of "mountains" and "relief" were often tackled. In early 2013, the pupils took part in a project called "heritage class in the Eastern Pyrenees". Geography periods during the weeks following this trip were all focused on mountain relief. I have chosen a geography class⁶ and selected one particular moment in this period to illustrate my arguments⁷.

Relief and mountains: syllabi in practice

- 8 To elaborate their lessons primary-school teachers follow a number of dictates, the official syllabi⁸ which are the basic notions and concepts they must teach their pupils. Syllabi indicate teaching methods (Amigues, 2009), but it seems that in geography, teachers take a certain distance from the given instructions, for they feel they don't need to follow them as rigorously as for other subjects such as French or mathematics which they consider more fundamental (Phillipot, 2011). Besides, it was shown on several occasions that what is actually taught in class results from the representations the teachers have of the syllabus rather than the syllabus itself (Audigier, Crahay and Dolz, 2006).

What is prescribed in syllabi?

- 9 Since the 2002 syllabi, the study of relief and the definition of a mountain are not explicit objects of knowledge but rather landmarks. In the 2008 syllabi, they are included in a global theme entitled "French territory in the European Union" and more specifically in the sub-theme "the great types of landscapes" that pupils need to identify, with the help of map studies "the principal characteristics of relief, climate, and hydrography". To learn these landmarks, pupils need to study and memorise maps (in so far as they are landscapes). For Gérard Hugonie (Hugonie, 2008), this is not determinism but rather a pedagogical intention to set landmarks necessary to identify the principal characteristics of territory. In the new syllabi, in years 2 to 4⁹, teachers must bring pupils to "recognise different landscapes: coastlines, mountain massifs, countryside, towns, deserts..." In year 5, it is on the occasion of the study of their pupils' close living environment that teachers must draw on "basic vocabulary related with environment description (relief, hydrology, climate, vegetation)". The expression

"basic vocabulary" is significant and raises the issue of basic knowledge (Trouvé, 2010) and more generally the issue of the basic knowledge in geography. Then, it is specified that the acquisition of this vocabulary continues until the end of year 7. The 2008 syllabi just as the 2016 syllabi incites teachers to treat relief on the occasion of a human, cultural or social geography theme.

What do teachers do and why?

- 10 In practice, not explicitly teaching French relief and mountain landscapes, while teaching a preceding chapter that would, for example, be entitled "French relief" as in the syllabi previous to the 1990s is not obvious. Teachers reset, re-create and transform the syllabi according to what they consider a priority. In the blog entitled "Mallory's class"¹⁰, a chapter composed of four teaching periods is suggested. It is entitled "France: relief, hydrography and climate". During this survey I have noted that physical geography often comes first in classes even if it is not explicitly said. To show this I will take three teachers' quotes taken from different contexts.
- 11 Here is an extract taken from a conversation on the primary-teachers' discussion group:

"As for physical geography, it seems essential to me to know it to tackle more complex notions ...You can never give geography a human dimension if you don't know its physical meaning. It is like teaching the operating technique of multiplication to a child who cannot count."¹¹
- 12 The following quote was taken from a group interview involving all teachers of years 5 and 6 in a Parisian school:

"In elementary school, as its noun indicates, pupils must be taught what's elementary, the basics, and learning relief, the mountains, seas, rivers, these are the basics. I teach a mixed Year 4 and 6 class and I teach my year 5s the geography of France during the whole schoolyear."¹²
- 13 The first factor explaining the endurance of this physical geography in schools, the organisation inherited from classical geography and human geography, in which the former determines the latter (Hugonie, 2008; Clerc, 2002; Lefort, 1992) and this maintains the idea of a linear cause to effect relation between the environment and human activity. Thus the symmetric dimension of geography is not considered. The reasoning can only be linear. The teachers I met during my research in theory all know that this approach is outdated, but they do not feel they are being "backward-looking" or "reactionary" in teaching these notions since they appear to them as basic and seminal to initiate the reasoning. This is also what the tables of contents suggest in some schoolbooks and many activity sheets for relief teaching on teachers' blogs, the work on French relief is often done for itself and initially disconnected from spatial, cultural and human considerations. The study of relief almost always appears as the starting point of learning geography and in this following a long established tradition according to which one must set the initial frame in a nomenclatural way (pupils must first learn to localise and name the principal characters of relief) (Hugonie, 2008). For most teachers interviewed, there is no question of determinism, but the easiest preconceived order that first sets the foundations without which all the other geographical objects could not be understood. In this respect, school teachers agree with the social demand (Lefort, 1992, 2010) which assimilates knowledge in geography with geographical objects (the map of relief and of the principal summits, for example).

- 14 This excerpt from an interview, relief (here considered as the study of its forms) is presented as more simple to tackle first as it is easier to understand for pupils:

"We start again in Year 5 with the study of Europe. (...). We have scheduled our own progression. We started by physical Europe, we revised what a mountain, a river, a coastline was, basically all that was relief-related and then we moved on to the larger study of Europe, the European Union, the institutions."

- *Can you estimate how much time you spend on this part?*

"I have to say it took us a long time. Because at the moment we are doing climate. We stayed on the first part until the winter mid-term holidays in February (...) In the schoolbook edited by Belin, they began with the euro, the European Union and then relief. But for me, this was way too hard to start the schoolyear with because the concepts were too difficult (the European Union, the institutions...)"¹³.

- 15 This knowledge and this learning process of the forms of relief (through maps at the scale of Europe that pupils complete and colour) therefore take up at least half of the geography lessons of the school year in this class. "Simple" is here opposed to "complex" and matches another pair: "concrete/abstract". Therefore, studying the forms of relief is seen as "simple", "concrete" while the human dimension is seen as complex and abstract. Yet, it is only simple in appearance. What is simple for pupils is that they do not have real difficulties identifying and recognising a mountain landscape because even before they use the word, they have already conceived a prototype (I am here using the cognitive linguistic approach and ideas of psychologist Eleanor Rosch), that is a typical mental image. Children very early conceive (during language acquisition) a prototypal image of a mountain (in the playground and sandpit at nursery school, children build "mountains of leaves" at fall). The degree of salience is therefore adjusted to their scale. Pupils in the playground obviously know that a heap of dead leaves is not a real mountain and understand that by saying "a mountain of leaves" they refer to underpinning characteristics of the concept of mountains, as we understand it in France (high, more or less pyramidal form, triangle (MEUNIER, 2014) more or less curved at the top, that "blocks" the view, that is an obstacle as what is behind it can't be seen). These underpinning characteristics are therefore those that shape the frame of the word "mountain" and give it sense.
- 16 In practice, teachers therefore spend more time defining and teaching physical geography than what the national syllabi prescribe. Everything therefore works as if eventually, this teaching process was conducted in quite a clandestine way. The teachers I met are aware that this is not how they should teach, yet they teach this way and not only for pedagogical reasons (Hugonie, 2008). My point here is not to deplore these informal practices, sometimes felt as clandestine or even "oppositional" and nourish an old and sometimes sterile debate on the gaps between scientific geography, school geography and the geography really taught in schools. These methods exist, they are frequent and ordinary. However – and for good reasons, as these approaches are theoretically outdated so they are no more in the pedagogical or didactic reflexion – teachers cannot elaborate projects that they can be fully satisfied with and often find themselves confronted with difficulties putting their project into practice and this is what I am now going to try to describe and analyse.

Yet, teachers find it difficult to teach these notions

- 17 The paradox of the situation is that teachers would like to teach the forms of relief despite the national instructions, but I have noted that they find it hard to actually do so. The pedagogical scheme is difficult to set and this primary intention often turns out to be a simple spotting and localising activity, for no updated pedagogical tool or model is proposed to teachers.

Schoolbooks are not adapted to teachers' "unsaid" objectives

- 18 In schoolbooks, as mountains and relief are not at the core of the learning process, definitions can vary from one book to the other. The teachers' books that come with the pupils' schoolbooks don't give a more stable definition because the authors follow different paradigms of geography: The Magnard Guide (le guide Magnard) (Ouriachi, 2010) suggests a clarification on the formation of French relief by going through the different geological eras while the Hachette Guide (le guide Hachette) (Clary, 2010) describes the forms of relief without defining the notions while indicating to teachers that *"these forms of relief give landmarks which will enable pupils to later spot the different elements they have come across in lessons to come. They give one of the keys to explain human occupation, but insist on relief as only one element among others (such as history, culture, layout elaborated by humans...) all leading to the analysis of a geographical situation."* These positions also reflect the theory-related difficulties in geography today, making it hard to define an updated corpus of geographical and spatial knowledge. The lively debates among geographers are neither known, nor perceived by primary-school teachers who don't have the theoretical background to determine which paradigm is presented to them.

Absence of material : DIY

- 19 Teachers also do with the teaching material they have. Schoolbooks, teachers' books or pedagogical suggestions scrupulously follow the syllabi and therefore never contain projects on "the mountains" or "French relief" as in the 1980s schoolbooks. Thus teachers very often use (and paradoxically more and more while the editorial offer — print and digital editorial offer is ever increasing) the worksheets and shared documents on the Internet (Charpentier, 2014) and swop older documents that they scan. I postulate that in the absence of updated and renewed teaching tools on these notions, teachers get older tools that treat these questions straightforwardly where they can.
- 20 Teachers manage with what they have and lay their own teaching tools out thanks to office software that is more and more intuitive and that enables each of them to produce teaching material that is very much like the editors'. An assessment drawn from the blog "Teacher Séverine's schoolbag" (« Le cartable de maîtresse Séverine »¹⁴) enabled me to highlight several points. The assessment displays precise objectives. One of them is "You can define French relief". This assessment reveals that the words "mountains" and "relief" are associated as if "relief" were a synonym of "mountains". The assessment includes a localisation exercise with a legend to fill in. In the last exercise, "relief" is the equivalent of "mountains". This assessment shows the

assimilation relief/mountains as resulting from the cultural and spatial imagination which reduces relief to mountain landscape only. In other words, the low and sandy coasts are a form the earth relief but they can't "show" in these situations where pupils are taught about relief. Only the salience of relief higher than 500 to 600m, which teachers consider noticeable renders the idea of "relief" possible in the teachers' minds. No exercise in fact assesses the capacity to define the word "relief" or the word "mountains".

Evaluation de géographie CE1/CE2 – Le relief français		Evaluation de géographie CE1/CE2 – Le relief français																					
<p>Compétences évaluées :</p> <p>Etre capable de définir le relief français</p> <p>Etre capable de situer sur la carte de France les massifs montagneux</p> <p>Etre capable de définir ce que sont les parcs nationaux et leur rôle</p> <p>Connaitre les activités humaines sur le relief</p>		<p>Prénom : _____</p> <p>Date : _____</p> <p>Note : _____</p>																					
<p>1. Entourer les bonnes réponses concernant le relief : (6 points)</p> <ul style="list-style-type: none"> Le relief français est constitué de : 4 / 2 / 6 massifs montagneux En France il existe : des montagnes jeunes / des montagnes anciennes / des montagnes adolescentes Les montagnes jeunes sont : Alpes / Massif-Central / Jura / Vosges / Corse / Pyrénées Les montagnes anciennes sont : Alpes / Massif-Central / Jura / Vosges / Corse / Pyrénées La jeune montagne a : pentes raides / pentes douces, haute altitude / basse altitude, sommets pointus / sommets arrondis 		<p>*Qu'est-ce qu'un parc national ? Quels sont les animaux protégés en montagne ? (4 points)</p> <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>																					
<p>2. Compléter la légende de la carte de France : (6 points)</p> <p>*En donnant le nom des massifs montagneux :</p> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: black; margin-right: 5px;"></div> <div style="width: 100px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: black; margin-right: 5px;"></div> <div style="width: 100px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: black; margin-right: 5px;"></div> <div style="width: 100px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: black; margin-right: 5px;"></div> <div style="width: 100px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: black; margin-right: 5px;"></div> <div style="width: 100px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: black; margin-right: 5px;"></div> <div style="width: 100px; border-bottom: 1px solid black; margin-bottom: 5px;"></div> </div>		<p>3. Cocher les activités humaines que l'on trouve sur le relief : (4 points)</p> <table border="1"> <thead> <tr> <th>Station de ski</th> <th>Activités humaines sur le relief</th> </tr> </thead> <tbody> <tr><td>Station balnéaire</td><td> </td></tr> <tr><td>Le VTT</td><td> </td></tr> <tr><td>L'élevage</td><td> </td></tr> <tr><td>La randonnée</td><td> </td></tr> <tr><td>Le canoë</td><td> </td></tr> <tr><td>La pêche</td><td> </td></tr> <tr><td>La production laitière</td><td> </td></tr> <tr><td>Les ports militaires</td><td> </td></tr> <tr><td>L'escalade</td><td> </td></tr> </tbody> </table>		Station de ski	Activités humaines sur le relief	Station balnéaire		Le VTT		L'élevage		La randonnée		Le canoë		La pêche		La production laitière		Les ports militaires		L'escalade	
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From blog "Teacher Séverine's schoolbag". <http://www.lecartabledeseverine.fr/>

Challenging implementation of classroom activities:

- 21 This difficulty to explicitly name and define the knowledge at stake leads to a certain number of socio-cognitive misunderstandings (Bautier, Rayou, 2009; Bonnery, 2015) as we will see in the lesson I observed. The situation in class is the following: the pupils observe a photography showing a mountain landscape (Pyrenees). The photo was taken by the teacher during a school trip on the theme of heritage and the Pyrenees in the first two weeks in September. While on the premises, the pupils had drawn a picture of a projected landscape. In the first part of the lesson, they identified the document and were reminded of the definition of a landscape. The following transcription begins at the moment when the pupils start cutting out the different parts of the photo from the foreground to the background. In the foreground, the pupils recognised a forest.
- 22 The teacher first assumes that her pupils have acquired the definitions of relief and mountains and therefore considers they are only "terms they need to revise" (l.1 à 17). A pupil waves her hand in the air in an up and down movement and clearly draws the prototypic form of a mountain the bottom of which is shown as "flat", not salient, and forming the valley. She therefore draws a sort of double basin to represent the summit. The teacher then seeks to get the definition from the pupils (l.18 to 21) using a so-called inductive method and starting from what the pupils already know. She gets no answer and so she moves on to an exercise of localisation of the Pyrenees massif to solve the

problem while refraining from transmitting "ready-made" knowledge to pupils by giving answers away to them. She therefore relies on the pupils' spotting the Pyrenees massif on the map of relief (l.22 to 32), for the teacher thinks she will thus lead the pupils to define (identify, in fact) the mountains as in the assessment I analysed earlier.

- 23 Concerning the definition and shaping of the concept of relief, I have observed very different difficulties. A first strategy consists in using a priori simpler words to help pupils conceive a mental image of what "relief" refers to. The words "hollows" and "humps" are the teachers' favourites because they make it easier for children to imagine uneven topographical shapes that they can experience at their own scale (walking, cycling, in a car, one feels these differences in level). In the same perspective, the words "irregularities", "inequalities" seem to also express the unevenness of grounds that can be felt while walking, running... Yet the projection of these images of "hollows" and "humps", or this unevenness on another scale (that of a massif, a country, a continent or even the planet) remain a mental exercise that is difficult to complete as made obvious in the lesson. Distinguishing massifs, summits, mounts (l. 23-24)... being no more prescribed objects of knowledge are not taught as such to pupils who therefore have no other references than the prototype while these pupils are just back from a two-week trip on the ground and have already drawn the landscape they are observing in class during their trip.
- 24 Following her scheme —naming and describing the forms of relief and human occupation on the photo— the second part of the lesson is dedicated to a group work in which pupils draw a sketch of a photography representing a mountain landscape. The photo was taken by the teacher during the school trip in the Pyrenees two weeks before the relief-related lessons (l.33 to 86). What I observed is that the task the pupils had to complete was first that of a sketch. There is eventually no association between the line-drawing of the sketch with a black pen and the comprehension of forms of relief (l.50 to 64). This moment was one of sheer confusion and misunderstanding: stupor on the side of the teacher who thought her question "simple" and worry on the side of the pupils who could not give the answer expected by their teacher. The pupils therefore tried to identify forms in the photography; either they saw a mountain or a plain, or else a plateau. There they saw lines (l.61 to 64) — the lines of the sketch and foreground and background lines — and a mountain (l. 75). To reach the "relief" category, in their conception of things, they need to see more relief. Obviously this is all a question of scale, but it is crucial to understand what types of geography children shape on the basis of documents, pictures, words and activities they get in class. The word "shape" can be the source of misunderstandings for pupils who associate the word "shape" with geometry. Thus, during another lesson, a pupil understands "shapes" in the following instruction "draw the shapes of relief on your sketch" as geometrical shapes and instead of the lines the teacher asked for she drew squares, triangles where she thought shapes were different. Besides, graphic semiology used in the language of map drawing more often resorts to geometric shapes in the legend. It therefore is not easy to conceptualise the shapes that relief can take for a child (just imagine a space in a child's spatial imagination, where squares, circles and triangles all jostle one another on the surface of the earth). Indeed, the list of examples is here to bring to the forefront these shapes and levels of salience but the comprehension, for example, involves prior recognising of the mentioned forms (plains, plateaus, hills, mountains, valleys).

Eventually, it was through a different channel, that is by reading the title of the mural map (l. 78 to 82) that the pupils found the expected answer.

- 25 This extract from a geography lesson in fact shows that the conceptual shaping of salience really falls within the field of abstraction and so of a more complex notion to teach than it may look at first sight. As for the teacher, she sees relief as a topographic whole, it is the model of the contour line on the topographic maps which brings her to deduce the level. In the following lessons, pupils will be led to work on contour lines of a topographical map and to make a simplified cross-section based on an extract enlarged in the A3 format. The pupils' and the teacher's vision do not match in this extract. Yet they can at least make sense out of the same object, that is the mural map the reading of which eventually led the children to fulfil the assumed expectations of the teacher.

Conclusion

- 26 Expressing salience remains a delicate situation to handle for primary school teachers. Facing their own representations of what teaching geography should be like (knowing the forms of relief is assessed through spotting the principal forms of relief in France on a map), caught between their own convictions, those of the institution and the more remote or less well-known convictions of academic geography, it is difficult for primary school teachers to propose renewed and adapted pedagogical schemes. The question of teaching material permeates as both teachers' and pupils' misunderstandings often stem from this material.
- 27 I would like to finish this article by the question of manipulation as a means to better approach and conceptualise salience. The importance of action in the process of learning mathematical concepts is often highlighted and well-known by teachers who in spite of less frequent manipulation activities in years 4 to 6 than in years 1 to 3, do not hesitate to resort to them. Using one's hands to learn is a fundamental method to follow: exploring a map of relief that is also a map in relief with the palm of one's hand is a means to send sensorial information to the brains which much more efficiently thus shapes the relief category with all the nuances it is made of, from ocean bottoms to the highest mountain summits. The construction of simple maps in relief, of maquettes, of boxes containing objects and of playdough are learning processes little explored today in geography and absent from most recent schoolbooks and teachers' books. "Making" geographic material is a means to perceive it and to take it in for oneself. Older schoolbooks suggested many activities of this type, but they dissociated the study of forms of relief from human and cultural phenomena¹⁵. The aim is not to regress into the past, to revive "granny's old recipes" the good old geography of long gone days, but the aim is to question today's so-called active and constructivist teaching methods which are eventually but little explicit and little "active" in the literal sense of the term. Could we not "make" geographic material with the pupils while integrating contemporary paradigms? Could we not clearly and serenely raise the question of learnings partaking of physical geography to avoid teacher's diving into the reproduction of "ready-made" documents to photocopy – for want of better solutions – dating from a time when they were explicitly taught to pupils?

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List of visited websites and blogs

- Primary school teachers' forum : <http://forums-enseignants-du-primaire.com>
- La classe de Stefany : <http://www.laclassedestef.fr>
- La classe de Mallory : <http://www.laclassedemallory.com>
- Le cartable de maîtresse Séverine : <http://www.lecartabledeseverine.fr>
- Orpheecole : <http://orpheecole.com>
- Le Pass education : <http://www.pass-education.fr>
- Mon cartable du net : <http://mon-cartable-du-net.perso.sfr.fr/geographie.html>
- Ma maîtresse de CM1-CM2 : <http://mamaitressedecm1.fr>
- À l'encre violette : <http://mamaitressedecm1.fr/?p=91>
- Cenicienta : <http://cenicienta.fr>
- Primary school teachers' website: <http://sitespe.fr>

NOTES

1. See bibliography.
2. MENESR, « School time and curricula at primary school », decree issued on June 9th 2008, *BOEN (Official Journal of the French National Education)*, special issue, n°3, June 19th 2008
3. MENESR, « Progressions for years 2 to 6 », *BOEN*, n°1, January 5th 2012
4. MENESR, « Recommendations for curricula implementation », circular n° 2014-081 du June 18th 2014, *BOEN (Official Journal of the French National Education)*, n°25, n 2014
5. See bibliography for list of visited websites.
6. The full transcription is in the Appendix. I will refer to particular lines of the transcription through this article.
7. Material used in this article are excerpts from the PhD thesis I am currently writing. It is a participative observation based on ethnography methods. I have thus observed all the geography classes of a year-5 class (CM1) during two academic years (2013-2014 et 2014-2015), in the 17th arrondissement of Paris where the population is mainly from a wealthy social background. The teacher is experienced; she trains other teachers and has herself taken several teaching courses in geography. She has been a teacher since 1979.

8. While I am writing this article (March 2016), it is the syllabi published on June 19th 2008 that are currently enforced. Here is the link to access the texts: <http://www.education.gouv.fr/bo/2008/hs3/default.htm>
 9. In years 2 to 4, what is taught is not exactly geography. It is in fact the first elements of a geographic culture. The educational theme is entitled "questioning the world" and includes exploring space and time.
 10. <http://www.laclassedemallory.com/la-france-relief-hydrographie-climat-a107033304>: Mallory has been a teacher since 2005; she was born in 1982 and teaches in a school in the north of Grenoble and passed a bachelors in educational sciences before she qualified as a teacher.
 11. Message posted on July 29th 2015 on the primary school teachers' discussion group (<http://forums-enseignants-du-primaire.com/topic/316051-geographie-ce2>)
 12. E-150602 - 12'45: group interview involving all teachers of years 4 to 6 in a school located in the 13th arrondissement of Paris.
 13. E-140407- 7'00 à 8'31: interview of A. (teacher in Year 5 in a school located in the Belleville district in the 20th arrondissement of Paris).
 14. <http://www.lecartabledeseverine.fr/>: on her blog the teacher says she has a 15-year experience of teaching in the Ardennes region (in years 3 to 5: CE1/CE2 and CM1)
 15. See, for example, the preface of a 1948 geography schoolbook in which author L. Planel, invited pupils to make "collections, experiments drawings, modelling which extend and long lastingly teach seminal notions through action and personal research": translated from (Planel, L. (1948). *Première géographie documentaire*. Paris: Belin.
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ABSTRACTS

In this paper my goal is to indicate how children's geographies of the alpine mountain resonate with academic knowledge about the mountain. The aim is to show how teachers of primary school students (aged 6 to 11) use the words "relief" and "mountain". How do they explain and show salience to their students, who perceive the mountain only through mediation in the form of pictures, illustrations, drawings or movies? What kind of discourses regarding the mountain do they develop, and how do these discourses contribute to building a cultural and spatial reality? This paper is based on an analysis of school textbooks (from the 1970s to the present day), classroom observations and digital resources created and used by teachers.

INDEX

Keywords: children geography, relief, mountain, landscape, landform, primary school, learning, teaching methods, digital learning

AUTHOR

ALEXANDRA BAUDINAULT

Université Lumière Lyon 2

ED 483 ScSO - UMR 5600 "Environnement, ville, société ". ESPE de l'académie de Paris /

Université Paris Sorbonne

Département d'histoire-géographie

baudinault@gmail.com