



Didactic and presentational organisation and structuring of the learning content in the context of ubiquitous learning.

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Second phase : 2000 – 2006

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**REFERRING INNOVATIVE TECHNOLOGIES AND SOLUTIONS
FOR UBIQUITOUS LEARNING (CHIRON)**

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1/ Introduction

Even if it seems to be obvious, it has to be emphasized that there exist a double dimension in the understanding, working and, hence, improvement of u-learning issues:

1. the *technological and technical one* (information and communication devices; multimedia information and knowledge availability and accessibility ...)
2. the *social and cultural one* (i.e. learning as a ubiquitous activity taking place in a social setting, performed by social actors, ... and, this, with the help of, by means of *any* digital object or resource possessing a relevance for the learner's objectives or aims).

In many reports and expertises, u-learning is mainly approached via the technological and technical perspective which has its relevance, especially, with respect to *short-term* economical and commercial issues.

But it is also obvious that the delivery of (very broadly speaking) educational material not only on PC but also on mobile phones, i-pods, iTV, etc. has to satisfy potential user needs, interests or desires or – at least – has to have a such appealing aspect that it *is – potentially – able to create* a recognizable user need and interest.

For this reasons, studies about u-learning have also to take into account social and especially cultural or conceptual (cognitive) questions such as of how to understand and control better on the one hand of what is called in a most broadest sense “learning”, or a “learning situation”, and on the other hand of intellectual services and products fitting with such – very broadly speaking – learning situations.

In this report we will try to explore this second dimension, the social and cultural one, determining not only our understanding of u-learning but also of possible evolution scenarios of this (new ?) paradigm.

Chapter 2 is dedicated to a better understanding of what one can call a learning situation in a very broad sense (and not only in the sense of formal or



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semi-formal and institutionalised situations). A basic and a more advanced *narrative model* will be presented for the design of any type of learning situations.

Chapter 3 discusses the relationship between digital objects and digital learning resources. A concrete example will be presented.

Chapter 4 deals more specifically with the question of (re-)authoring of digital objects in order to promote them as digital learning resources.

Chapter 5 presents a technical environment for the (re-)authoring of mainly digital audiovisual objects.

Chapter 6, finally, presents a concrete case of (re-)authoring resources for adapting them to an a priori open diversity of learning situations.



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2/ Narrative scenario building for learning situation design

2.1/ A general definition of what a learning situation is

Indeed, i/ learning situations *not only* exists in the for this purpose created institutions or institutional settings (of which schools, universities, vocational training centres, ... are the most typical representatives); ii/ learning situations are *not only* such situations that follow an institutionalised temporal program and rhythm of learning (represented typically all over the world by school periods, learning hours, leisure time, ...); and iii/ learning situations also *not only* recover formally acknowledged learning objectives of which the achievement is confirmed by specific formularies or documents such as (school, university, ...) diplomas.

These three characteristics only recover, as we know, a *specific type* or social *genre* of learning situations – the formal or institutional ones.

In, so to speak, *de-structuring* these three characteristics, learning situations can take very different and diverse forms or *genres*, can happen everywhere, every time and can be more or less far away from learning situations which are formally identifiable as such.

In order to get a more appropriate picture of learning and learning situations out of the formal institutional setting and as an activity that happens, is performed every time and everywhere, we should assume a sort of a *canonical narrative* that explains learning as a *problem oriented activity*. The canonical narrative means, roughly speaking, that:

1. a learning situation is always preceded by a situation which is not a totally routine one, which produces on the side of a human agent (in a phenomenological terminology) an *astonishment*, an *interrogation* and – as a result of it – a sort of (cognitive or axiological) *lack*;
2. the learning situation itself may recover any activity that satisfies the (cognitive, axiological) lack produced by an *astonishment*;
3. the learning situation is followed by a third one that, so speak, evaluates and sanctions the learning as a sort of satisfaction strategy of the previous *astonishment* or *interrogation* (figure 1).

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2.2/ The basic narrative schema of a learning situation

This *narrative schema* (figure 1) of learning as a problem oriented activity organises very different and diverse situations which occur every day and every where.

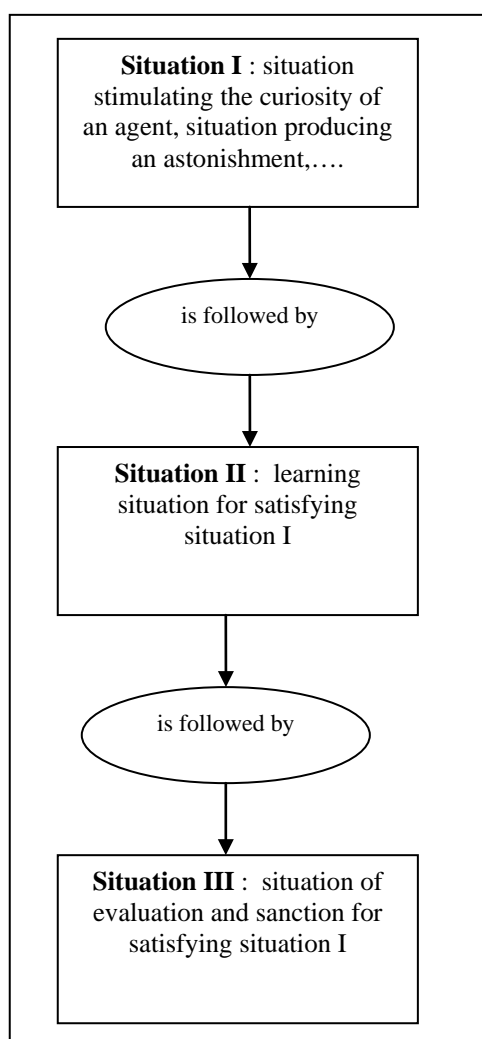


figure 1: a simple model showing the canonical narrative underlying a situation of learning in the most broadest sense

In this sense, for instance, it is wholly justified to speak of a *learning situation* if a visitor of a museum, astonished or interrogated by a specific oeuvre, uses his/her mobile phone for connecting to an accessible online knowledge resource that provides him/her with the inquired information – information which may be, for him/her, finally more or less relevant, more or less satisfying, more or less understandable, etc. Taken in this very broad sense:



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1/ all – even punctual – information seeking processes (such as those via Google) are *potentially* learning situations (i.e. processes that are performed in reaction of an interrogation, an astonishment producing, as narrative semioticians are saying, a – cognitive, axiological, ... – *lack*) and, in this sense;

2/ all information seeking devices (PCs, mobile phones, i-pods,...) are *potential* learning services;

3/ all online available resources (html pages, images, videos, etc.) are – with respect to a given information search activity looking to satisfy an initial lack – *potential* learning products.

The consequences of this affirmation are somehow strange because *all* devices and resources are becoming *eo ipso* in a broad sense learning devices and resources. For instance, a simple digital library of pictures or videos can be considered, in this perspective, as a library of visual and audiovisual learning resources; a search engine such as Google can be considered in itself as already a learning service, etc.

2.3/ A more sophisticated narrative schema of a learning situation

Let us take, once more, the simple – and in the technological literature overused – example of the museum visitor searching resources for satisfying his curiosity or his lack of knowledge. Indeed, the museum visitor not only searches a resource for satisfying his curiosity, he/she searches *in a certain way*, with more or less ability, with more or less luck, also.

Furthermore, he/she not only *localises* a resource, but he weighs the resource, *compares it critically* with other ones with respect to its interest for satisfying his curiosity. He/she also not only looks on this resource but he/she *appropriates* its content or message more or less happily, more or less easily, with more or less liberty.

And, finally, this appropriation process by itself may be a simple “information transfer” or, contrarily, full up of tests, trials, proves, etc. and many other (*pedagogical*) “events” that complicates the appropriation process, can make it to an “endless” story.

These are *three* central (not the only) cognitive strategies (figure 2) showing the ability of a user in the role of a learner to satisfy his/her curiosity, astonishment. It is the expression “*learning to learn*” (i.e. the *meta-learning*), often used in the didactical literature, that recovers the acquisition of these

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strategies by the users – strategies without which he/she would not be able to adapt his/her learning with respect to the concrete requirements and constraints of a given learning situation nor be able to *capitalise* his/her knowledge acquisition through different concrete learning opportunities and through time.

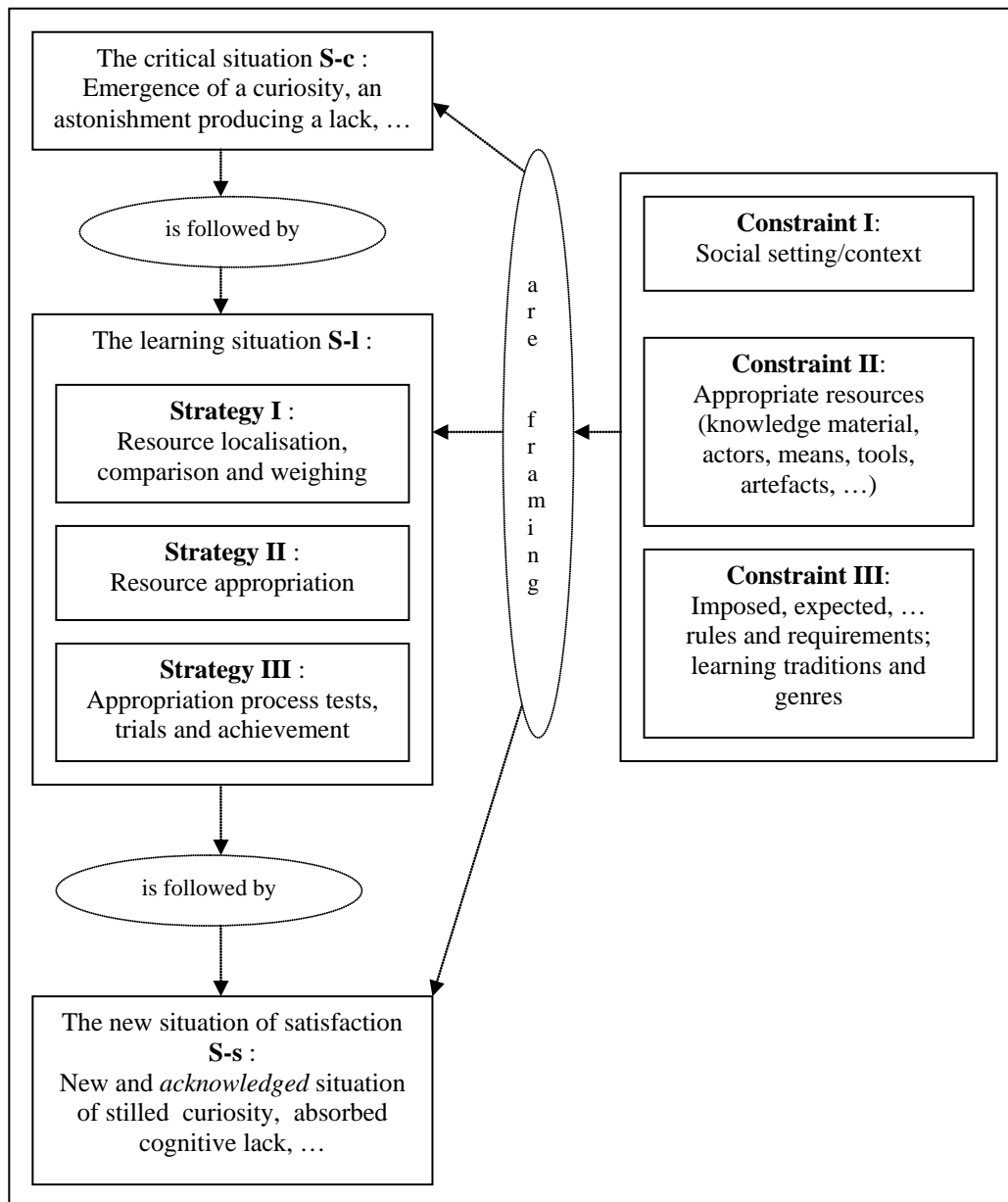


figure 2: the canonical narrative of a learning situation integrating (social, cultural, ...) learning constraints and (cognitive) strategies

Besides these (and other, not mentioned) cognitive strategies composing the canonical narrative of a learning situation broadly speaking, there are naturally also specific *constraints* (figure 2) coming from the (*social, natural,*



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...) *setting* and context in which a learning situation occurs, the *learning resources broadly speaking* (including not only the so called pedagogical material but also the implied actors, tools, means, artefacts, etc.) and finally the more or less *formalised aspect* of a learning situation.

No matter of what are more precisely the different steps of learning, it's figure 2 which shows in a more appropriate way than figure 1 the learning process as a *cognitive narrative*, as a solution process aiming at the satisfaction of an initial critical situation, an initial lack as narratologues (V. Propp, C. Bremond) would say.

But figure 2 is also a good one for making more understandable the multifacetedness of a learning situation as well as its stereotypical, internal dynamics which is largely comparable to a narrative (for instance, to a "success story" of which the principal players are not concrete persons or figures but the intelligence, the curiosity, the error, the satisfaction, etc.). Indeed, figure 2 (only schematically developed here), gives us the means for designing *scenarios* – learning scenarios of all sort. Figure 3 shows how to define a huge variety of possible genres of learning situations – more or less near or far from the formal ones or more or less or far from the very broad definition in which a learning situation is any situation that follows a "critical one" and which aims at the satisfaction of the first one.

The narrative model in figure 2 is only outlined here and has to be specified more carefully. Nevertheless, the interest of this model as shown in figure 3 is obvious for different practical reasons and especially for:

1. Curricula design;
2. Learning resource design;
3. Learning monitoring design.

Figure 3 outlines the structure of the script – i.e. the *procedures* and *technical documentation* – for identifying and designing u-learning situations and the resources necessary for handling them. This structured script helps us to not pre-determine fixed types of learning situations which always remain somehow artificial but, contrarily, to rely on more specific criteria pointing to the intrinsic dynamic of the more or less simple and straightforward or, contrarily, highly institutionalised, many years lasting satisfaction of an initial cognitive or axiological lack.

2.4/ The script for defining and designing (u-)learning situations

The script outlined in figure 3 especially shows us also what has to be satisfied for any available resource to become a pedagogically relevant resource. Relevancy in general and pedagogical relevancy in particular is



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contextually dependant on the given learning situation for which it has to be used. Therefore, one has to know the expectations, requirements and constraints of a learning situation:

1. either for identifying and collecting already existing relevant pedagogical resources
2. or for designing new ones out of already existing resources.

This statement leads us directly to the next chapter dedicated to publishing scenarios of pedagogical resources.

The structure of the script – the procedures and the technical documentation – used for designing scenarios of (u-)learning situations		
1	The critical situation S-c :	
1.1	Situation description <i>Learning motivator</i> :	<ul style="list-style-type: none"> – Description of the lack, the curiosity, ... stimulating or making necessary a learning process; – Description of the social setting/context of <i>Learning motivation</i> – Description of resources – Description of requirements and rules
2	The learning situation S-l	
2.1.	Situation description <i>Learning situation lato sensu</i>	<ul style="list-style-type: none"> – Description of the learning situation as a whole; – Description of the social setting/context of <i>Learning situation</i> – Description of resources – Description of requirements and rules
2.2	Resource localisation, comparison and weighing	<ul style="list-style-type: none"> – Description of the process of adequate resource localisation and choice
2.3	Resource appropriation	<ul style="list-style-type: none"> – Description of the (information, knowledge) appropriation process itself
2.4	Appropriation process tests, trials and achievement	<ul style="list-style-type: none"> – Description of the “pedagogical events” that punctuate the appropriation process
3	The new situation of satisfaction S-s :	
3.1	Situation description <i>Learning evaluation</i> :	<ul style="list-style-type: none"> – Description of evaluation, sanction and acknowledgment process; – Description of the social setting/context of <i>Learning evaluation</i> – Description of resources – Description of requirements and rules

figure 3: the structure of the script – the technical document – used for the description and design of (u-)learning situations and resources



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Indeed the principal challenge is to elaborate a methodological, technical and practical environment enabling users (learners themselves, authors of pedagogical material, teachers broadly speaking, parents, community services,...) to process existing resources in a way that they become relevant for a given u-learning situation.

Before discussing this indeed central point in the (re-)engineering of digital resources, let us summarize that figure 2 and 3 are means for understanding and “processing” much better critical questions concerning u-learning in its conceptual, cultural and social dimension such as:

1. types of u-learning situations;
2. relationships between u-learning and formal learning;
3. status of resources as potentially relevant resources in u-learning situations;
4. the status of facilitators/mediators in u-learning situations;
5. the status of means, tools, pedagogical methods, etc in u-learning situations;
6. different forms of learning recovering highly different activities such as reading, working, experimenting, playing, ... eventually organised in more or less routine programs;
7. types and forms of different pedagogical events that punctuate the appropriation process itself such as formal exams, tests, notations, etc. in u-learning;
8. etc.

The building or designing of scenarios of (u-)learning situations is based on *narrative semiotics*¹. Narrative scenarios can be used, as already stressed, for understanding and controlling learning situations – highly formalised ones but also un-formal ones, situations belonging to the daily life, situations having to do with the fulfilment of personal or, contrarily, social or again professional lacks or motives, etc. It's not the objective of this paper to develop the technical aspects of narrative scenario building (also applied in merchandising, negotiation, conflict solution,...). The point here is that narrative scenario building of learning situations can be a helpful and reliable tool for understanding and designing real social u-learning situations, explaining them and for creating for them the required pedagogical resources.



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3/ From digital objects to learning resources – the example of the audiovisual archive of humanities in Paris

3.1/ Digital resources as potential learning resources

As we have seen (figure 1 and figure 2), learning in a very broad sense is a problem oriented activity seeking to solve or to satisfy an initial lack, astonishment or again curiosity.

Let us come back to the already above introduced question of the status of digital resources or objects (texts, pictures, films,...) as – potential – pedagogical resources in u-learning.

Indeed, digital objects can be potentially relevant resources of a u-learning process but, such as, they are not (necessarily) u-learning resources. All depends on the contexts of use, of exploitation of digital objects ...

A simple text description of an oeuvre exhibited in a museum may be pedagogically relevant in a specific *context*, for a given user and with respect to the curiosity to be satisfied. In another context, this same description will not be able to satisfy the user ... and therefore be considered as not relevant, not useful, etc. by the learner.

It also depends on the *type of appropriation* understood either as a process of “simple (book based) lecture”, or an active interaction with a digital knowledge object, or again as a more complex global activity composed by and organised via different local cognitive acts implied such as comparing, testing, working actively with a resource, playing, simulating, etc.

It depends on the *evaluation of the learning* itself. For instance, appropriation is it performed mainly with respect to the personal stilling of curiosity or, contrarily, with respect to formal or semi-formal rules of evaluation, notation prevailing in formal educational situation.

Finally, it depends also of the *place* that occupies the digital object within a range of other resources available for a learning process – it can be a prescribed that the “learner” has to use, it can be a more or less central, traditionally used one, it can be a more or less good or risky “candidate” for good learning results, and so on.



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In looking on the web, we have different categories of digital objects which make them more or less suitable to become learning resources. For instance, we have:

1/ A huge category of rough, more or less *unstructured* digital objects (simple pages, photos, films, etc.)

2/ Categories of digital objects organised following *traditional publishing genres* (for instance: as digital books with chapters, as digital journals, magazines, as digital dictionaries and encyclopaedias, as digital atlas, etc).

3/ Categories of digital objects that are structured, organised with respect to *specific uses* and exploitations among which more particularly for the use in formal learning settings such as schools, universities, vocational training centres, etc.

All these categories of digital objects can become, as already stated in chapter 2, pedagogical resources, i.e. resources potentially relevant for specific (u-)learning situations. The real point is that, such as, they are maybe only partially, only more or less well attuned for a given situation. This means, more particularly, that they have to be processed, (re-)published with respect to the constraints, expectations and objectives of a given (u-)learning situation. In other words, we have to investigate:

1/ *strategies of reusing* existing digital objects in order to make them relevant for specific (u-learning) uses;

2/ *tools and technologies* (an “authoring studio”) for re-engineering existing digital objects in order to transform and “publish” them following given publishing genres attuned to specific contexts of use;

3/ the *implementation* of a methodology and a technical system of re-engineering existing digital objects – of the “authoring studio” – in the professional *environment* of concerned users and user groups and in their traditional *workflow*.

3.2/ An example: the online audiovisual archive of social and human sciences in Paris

In order to exemplify this real important challenge, let us take the concrete example of an online audiovisual corpus of about 2000 hours of video dedicated to the research in social and human sciences. This corpus has been produced by the French Programme [Archives Audiovisuelles de la Recherche](#)



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(AAR) in Paris. The AAR program has been launched in 2001 and aims at two principal objectives:

1) the production, management and exploitation of an online digital archive in human and social sciences understood as a central, publicly accessible knowledge pool;

2) the production of a technological and methodological environment for enabling knowledge producing institutions to build, manage and exploit their own online audiovisual knowledge pools accessible via a central multimedia web portal.

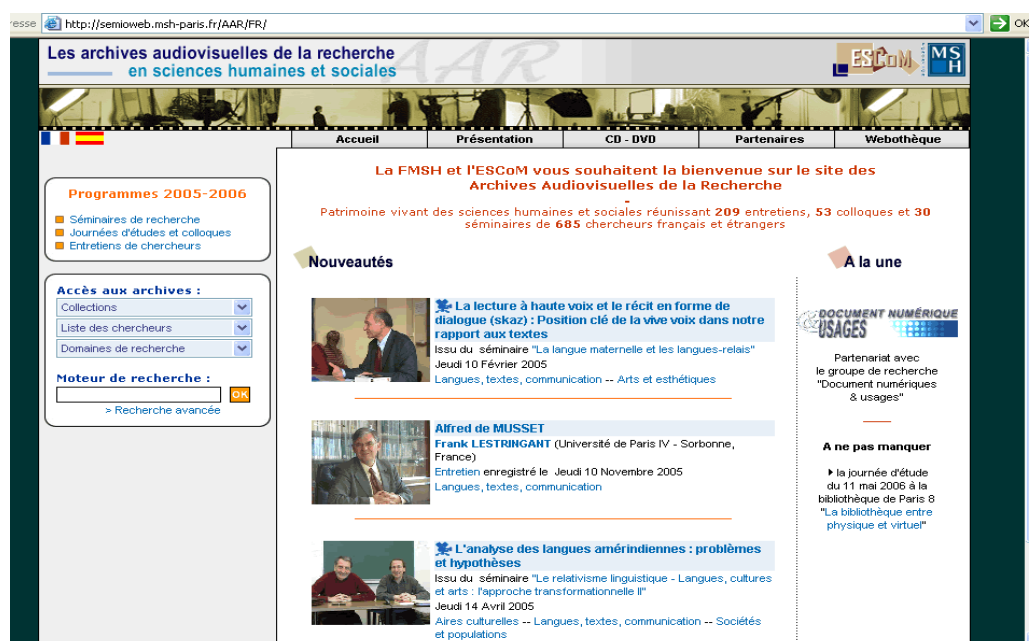


figure 4: the home page of the audiovisual web portal AAR

The records composing the digital audiovisual archive in human and social sciences contain individual interviews with researchers in all scientific disciplines (an interview may last from 30 minutes to more than 10 hours ...), conferences, research seminars, workshops, small reportages about the daily life in research labs, scientific expositions, etc. The AAR web portal, actually, proposes more than 100 research seminars, workshops conferences and more than 240 interviews between 30 minutes and 10 hours with researchers in all major disciplines of social and human sciences: paleontology, archaeology, social history, cultural history, art history, ethnology and anthropology, language and communication sciences, sociology, economical sciences, political sciences, philosophy as well as mathematics, epistemology, logics or again science history..

More than 780 researchers, scholars and professionals have already contributed to this audiovisual archive. They are not only from France but from more than 35 countries all over the world. Even if most of the videos are

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in French language, there also exist videos in English, Italian, Spanish, German and even Chinese and Hindi...

Let us have a short look on how these audiovisual resources are organised and what is their potential pedagogical status. Figure 4 shows the home page of the digital archive in social and human sciences. It organizes the access to the videos:

- thematic access via the most important research fields, via the type of a scientific event or along the name of the contributor

- access via key words and a research engine;

for the moment : French and Spanish access (accesses in English, German, Italian, Polish and Russian are under construction).

Each scientific event registered in the database of the audiovisual archive constitutes an independent dynamic web site.



figure 5: the home page of a scientific event filmed for the AAR programme

Figure 5 shows the home page of such a scientific event (in this case, it is an international symposium dedicated to the Chaco War in the Thirties of the 20th century – a symposium that has taken place in Paris at the end of 2005).

The home page of this scientific event proposes general information concerning the event itself as well as the persons and institutions in charge of its production and publishing on the AAR web site.

There are also, on the left side of the homepage (figure 5) links to different (customizable) headings whereas the most central is the heading “Vidéos”. In clicking on this title, the visitor accesses to the whole filmed, digitized and



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post-produced program of the scientific event (figure 6) as well as, finally, to the online video itself (figure 7).



figure 6: the audiovisual programme of a filmed scientific event

3.3/ Possible reuses of the audiovisual records of the AAR portal

Most of the online videos of the AAR are post-produced, this means that they are processed: thematically segmented, edited, indexed and frequently enriched by the means of joint online documents, links to external web sites, etc.

This means that, as such, they certainly constitute (monolingual) digital objects with a potential pedagogical relevancy. Nevertheless, this relevancy seems to be real especially for non-formal learning contexts: for people who are eager to understand specific questions in social and human sciences; for researchers who are looking for what's going on in their research domain; for professionals eager looking for "new ideas"; for teachers eager to illustrate their courses; etc. In this sense, three new exploitations of pedagogical relevancy could be envisaged:

1/ the opening of this – intrinsically monolingual – material for a multilingual knowledge market as this is the case for Europe;

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2/ the reuse – the republishing - of this material in more constrained learning contexts as they emerge, for instance, in formal learning settings (high school, university, etc)

3/ the reuse – the republishing – of this material with respect to other communication purposes such as, for instance, with respect to purposes specific to scientific journalism, to science popularisation, to scientific knowledge diffusion, etc.

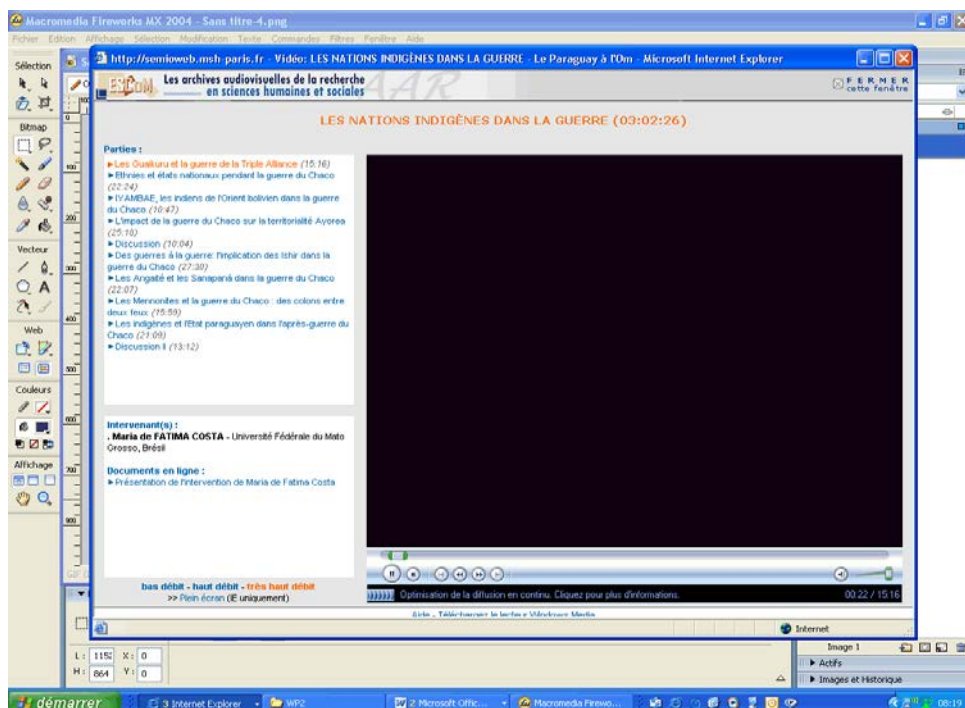


figure 7: the page for navigating through a video and visioning it

These exploitation possibilities certainly constitute one of the most central challenges not only for the quoted audiovisual online archives but for any digital resource centre (library, resource space, web site,...).

The main concern is here of how to make existing resources exploitable for specific contexts of uses and of how to overcome the linguistic and cultural barrier, i.e. of how to adapt a given digital object to an intrinsically multilingual and multicultural market.



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4/ The *semiotic atelier* or the question of re-engineering digital resources

4.1/ The – *semiotic* – reprocessing of digital data for u-learning issues

In looking on the above introduced three possible exploitation issues of the digital objects composing the audiovisual archive, the principal keywords we should keep in mind, are:

- already existing corpus of digital objects (in our case: audiovisual objects);
- reuse of digital objects;
- republishing of existing digital objects;
- translation and (cultural) adaptation of existing cultural objects.

They lead us to what we call the “*semiotic atelier*” recovering on the one hand *methods* or *procedures* and on the other hand *tools* and *services* for engineering or re-engineering existing digital objects (texts, videos, images, sound tracks,...) by any habilitated user in order :

1. either to accomplish his/her learning process (as a reaction to a given initial cognitive lack or astonishment; figure 2)
2. or to guide somebody else (who is playing the role of a learner) through a learning process.

In the first case, the user of the *semiotic atelier* is the learner himself; in the second case, he/she is the teacher, tutor, parents, etc. preparing digital objects for another “consumer” of pedagogical objects and services.

The crucial point here is that any digital object may become a relevant (pedagogical) resource (cf. figure 2) for a given (u-)learning situation but that for this it has maybe to undergo specific transformations or adaptations – and that these transformations or adaptations should become realisable by any (habilitated) user or user group and not centrally be managed (as this is the case, for instance in the (e-)library, (e-)archive or (e-)publishing paradigm).

The specific transformations and adaptations that a digital object has to undergo in order to become a (pedagogically) relevant object for a given (u-

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)learning situation can be summarised under the heading *authoring or re-authoring of digital objects* (figure 8).

4.2/ The (re-)authoring process of digital data

(Re-)authoring of digital objects is a more or less complex (individual or collective) process by the means of which a digital object or a corpus of digital objects (such as a corpus of video clips, a corpus of textual elements, a corpus of still images, a corpus of sound elements, etc.) are adapted, attuned to a specific context of use and, this, following a sort of *authoring* or *publishing scenario*.

In taking the example of the above presented audiovisual archive in human and social sciences, this means that:

1. a corpus of audiovisual files containing, for instance, information about a given or requested domain of knowledge (“the immigration policy in Europe since 1996”; “the status of French language in Western Africa”; ...);
2. undergoes a series of manipulations called “re-authoring”;
3. by the means of which they can be used as a *hypermedia folder*, a *video-lexicon*, a *courseware*, a *hyper-documentary*, etc. either in formal learning situations or in a wide range of non-formal one.

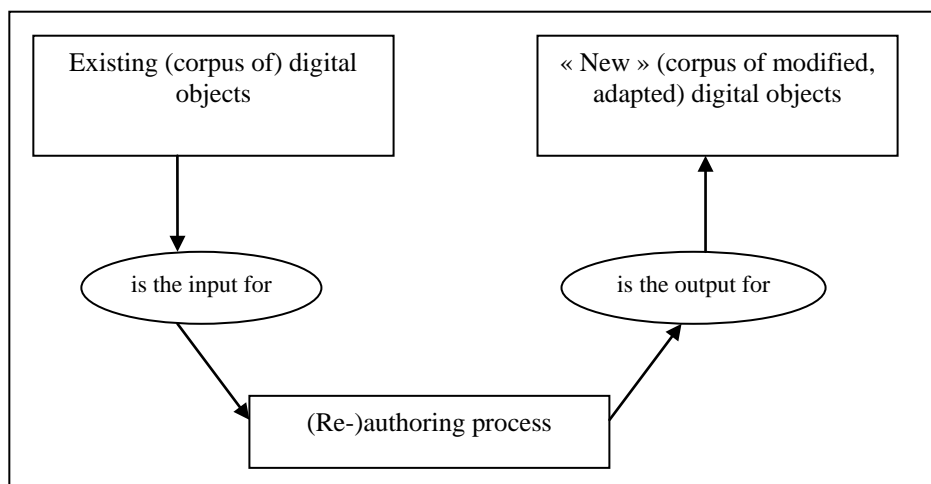


figure 8: The (re-)authoring process as a mediation process for (continuously and collaboratively) adapting digital objects to specific user needs

In considering more precisely the (re-)authoring process (figure 9) itself, it has to be explained with respect to:

1. the type and genre of (re-)authoring: content selection in a given corpus of existing digital objects, explanation & completion of selected

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content; existing digital object versioning; content translation; existing digital object interlinking; creation of new content parts; (visual, sound, ...) content expression modification; etc.;

2. the specific *type* and *genre* of digital objects: technical and scientific texts; audiovisual ethnographic documentaries; cultural heritage images; etc.;
3. the *goals* of a (re-)authoring process: *contexts of use* (learning, teaching, science popularisation, ...); *destines* (pupils, students, any person, specific social group, ...); *publishing genre* (courses, thematic folders, glossaries, info flashes, games, ...); *forms of distribution*; etc.;
4. the *resources*, means and tools of the (re-)authoring process: *human resources* (authors, domain specialists, translators; publishers; ...); *intellectual resources* (ontologies; thesauri; publishing models; aids, hints and more developed explanations and methodologies; ...); *technical resources* (indexing tools; annotation tools; translation tools; publishing tools; ...); *economic resources* (budget, ...).
5. the *process* of (re-)authoring *itself*: the phases and tasks composing a (re-)authoring *chain* (such as “publishing genre selection and preparation”; “corpus constitution”; “description and indexing”; “translation”; etc.).

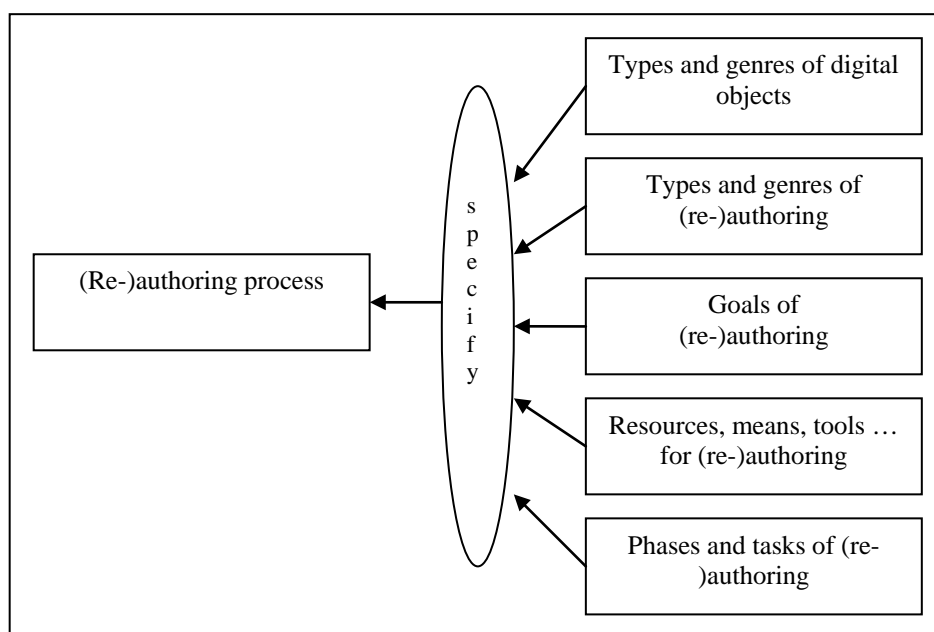


figure 9: Central components specifying the (re-)authoring process

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4.3/ (Re-)authoring – translation – adaptation: digital data versioning

The (re-)authoring process, finally, can be seen as a – in a broad sense – *intercultural translation* process. Indeed, a given set or corpus of digital objects (figure 8) are meaningful entities (and hence *re-authorable*) with respect to context(s) of uses, destines, social practices, etc. for which they have been designed. In other words, they belong and refer to a *culture* embodied in the life-world of social actors (figure 10).

For instance, a corpus of audiovisual files in the above quoted audiovisual archive of human and social sciences are dealing with linguistic diversity from a *socio-linguistic* point of view and for a group of destine of experts in this field (“life-world”). This corpus can be (re-)authored for a high diversity of potential contexts of uses and destines: for instance as an *introductory seminar* (a “Proseminar”, in German) in philological studies, as a *complementary course* in anthropology or sociology, as a *reportage* for a wider interested public, as a set of *info flashes* for people only with local interests in this domain, as a *discovery game* for children, etc.

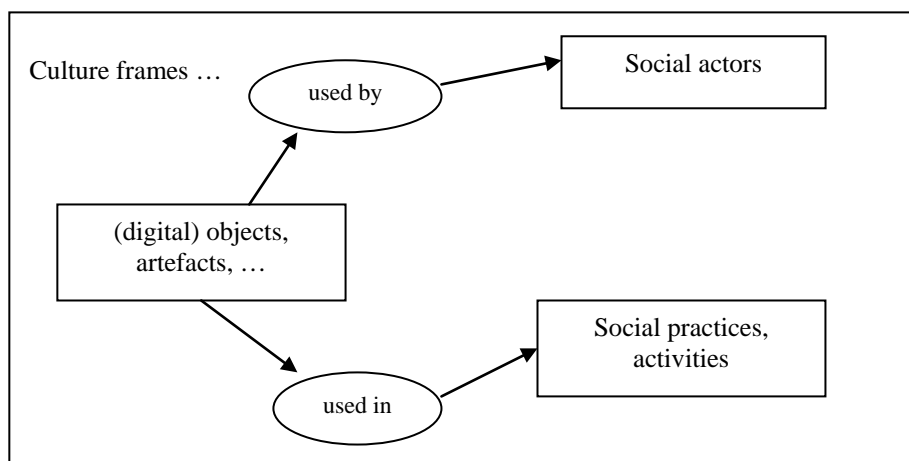


figure 10: The participation of a set of digital objects and artefacts in an embedding culture

Each one of these examples shows (re-)authoring as a process of – so to speak – *cultural adaptation* of an initially given set of digital objects, i.e. the content, form and function of the given digital object, to the target culture determining the interests and lacks but also the uses of that object by the destine. As it is shown in figure 10, the (re-)authoring process of a digital object can definitely be understood as the opening of the cultural specificity of a given digital object with respect to a given diversity of target cultures and the circulation of a digital object or artefact in its given cultural identity within



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a “multi-cultural (knowledge) space”. Linguistic translation, in this sense, is only a *specific case* of cultural translation.

In this sense, figure 8, 9 and 10 identify and try to give a conceptual explanation of one of the principal actions of the coming 7th framework of research and development of the European Community, i.e. to take into account the *linguistic and cultural diversity* that determine Europe as a knowledge society as well as a “market” for (cultural, scientific, ...) content services and resources. This is also, without any doubt, the most central challenge of (re-)using existing digital objects for (u-)learning situations which occur as specific social practices intended and performed by social actors and with the help of specific resources within an embedding culture (professional culture, personal culture, educational culture, linguistic culture, etc.).



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5/ Interview – a concrete example of a semiotic atelier for (re-)authoring digital objects

5.1/ General issues of the Interview environment

In this chapter a concrete example of a “semiotic atelier” – so the name of the *conceptual and technical environment* of (re-)authoring of existing digital objects – will be presented.

It is the software application *Interview* developed since 2005 conjointly by the R&D Department of the French Institut National de l’Audiovisuel (INA) and ESCoM (Equipe Sémiotique Cognitive et Nouveaux Medias), the R&D laboratory of the Maison des Sciences de l’Homme (MSH) in Paris. Its purpose is to allow any registered user (user group) to deal following his/her interests/desires with a previously selected corpus of video files. “To deal with” (i.e. “processing”) means here especially:

- the composition of a video file corpus and its importation in the Interview environment;
- the “subjective” identification and selection of a set of for the user relevant video segments;
- the (more or less) systematic and rich description, indexing and enrichment (via comments, interlinking with other resources, creation of tests and exercises, ...) of :
 - the referential content of the segments (i.e. the object of a segment, the domain which constitutes its topic);
 - the audiovisual language of the selected segments (i.e. the expression means of a topic) ;
 - the rhetorical level of the selected segments (i.e. the manner of how a topic is viewed and developed in a segment – this is a very important level because, in the case of the audiovisual archive of human and social sciences, most of the video files contain conferences and interviews with researchers);
 - the narrative relationships between the selected segments (i.e. the possible semantic relationships between chosen audiovisual segments);

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- the (broadly speaking) translation (“versioning”) of selected segments and their preparation for personalised publishing;
- and especially the publishing of the results of these authoring activities following (adaptable) publishing genres (for instance as thematic folders, as video-dictionaries, hyper-documentaries, courses, etc.) and with the help of publishing assistants.

5.2/ The main screen of the Interview environment

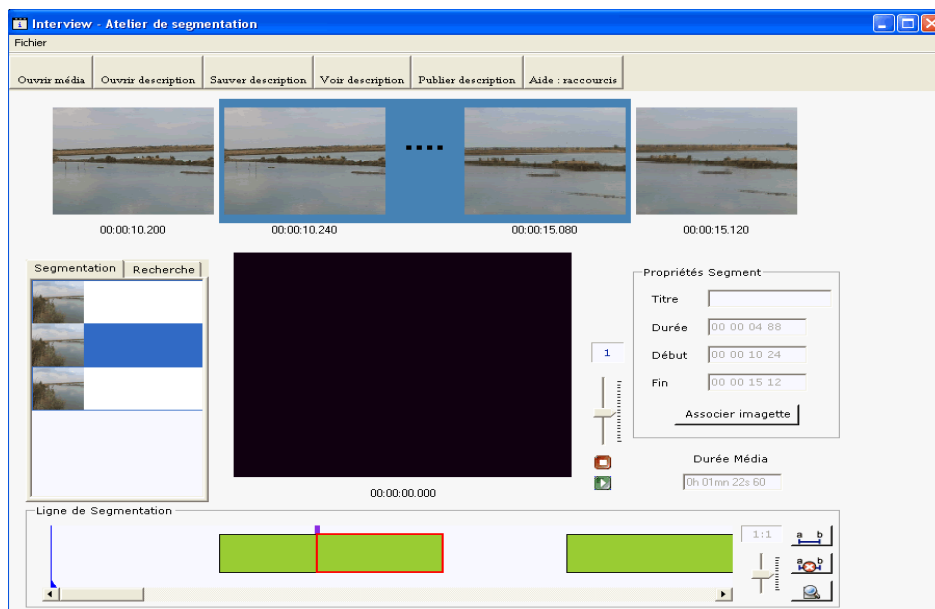


figure 11: The Interview tool and its main options

Figure 11 shows the main screen of the Interview tool with its principal functionalities:

- “Ouvrir Media” means to import a video file or a corpus of video files in the (re-)authoring environment of Interview;
- “Ouvrir Description” means to charge the xml file containing the state of the art of analready ongoing (re-)authoring project;
- “Sauver Description” means to save an ongoing (re-)authoring project;
- “Voir Description” means to start the different (re-)authoring aactivities (cf. below);
- “Publier Description” means to publish the results of a (re-)authoring activity in the form of a web site (actually the genre of the web site is a thematic folder but other publishing genres – video-dictionary, hyper-documentary, course, ... – are just under development;
- “Aide:raccourcis” recovers helps, hints etc. for using the Interview tool.

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5.3/ (Re-)authoring processing chains in Interview

Following the (re-)authoring motives or needs as well as the specific publishing genre, (re-)authoring activities can be very different, build – so to speak – different *processing chains*.

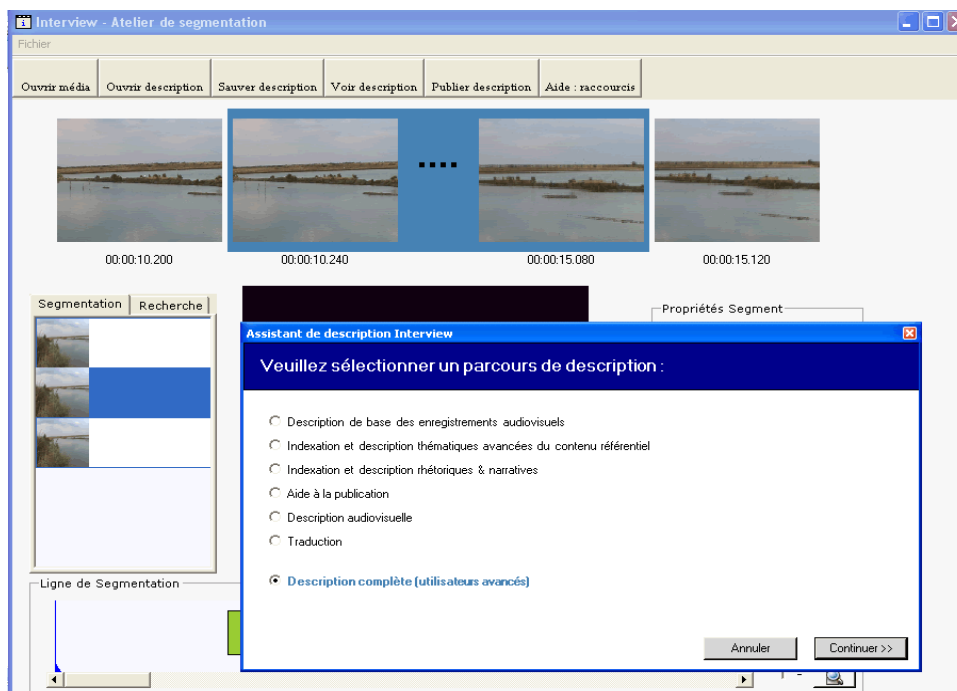


figure 12: A set of pre-defined options for processing, i.e. (re-)authoring a corpus of video files

After clicking on the “Voir Description” button, the (habilitated) user can make a choice, as figure 12 shows it, between different such processing chains. For the moment, the principal differences are between:

1. *basic processing activities* such as the identification, selection and indexing of (subjectively relevant) video segments and their publishing as an annotated corpus of video segments;
2. *more and even very sophisticated activities* including the rhetorical analysis of the content of chosen video segments, their commenting and (narrative) their re-arrangement as a new, completely virtual video;
3. and, finally, the *linguistic and cultural versioning* of video segments for adapting them to a public that does not possess neither the necessary linguistic nor the domain specific skills and competencies to understand a video file.

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These three main options will be completed with other (re-)authoring activity chains attuned to previously chosen publishing scenarios (i.e. video-dictionary, hyper-documentary, thematic folder, ...).

A specific option shown in figure 12 is the “expert option”. In choosing this option, the (habilitated) user is prompted to all proposed possibilities of working on a given corpus of audiovisual files (figure 13). This means that it’s up to the user to choose the processing activities which are important for him/her and to produce his/her own processing chains. To be able to work with this option, presuppose a user who is a real specialist in semiotic processing of audiovisual documents.

5.4/ The principal (re-)authoring activities in Interview

Figure 13 shows the principal processing activities proposed by the Interview tool. These activities have been specified and developed with respect to a *semiotic “vision”* of (audiovisual) documents. This vision can be explained with respect to the five principal assumptions:

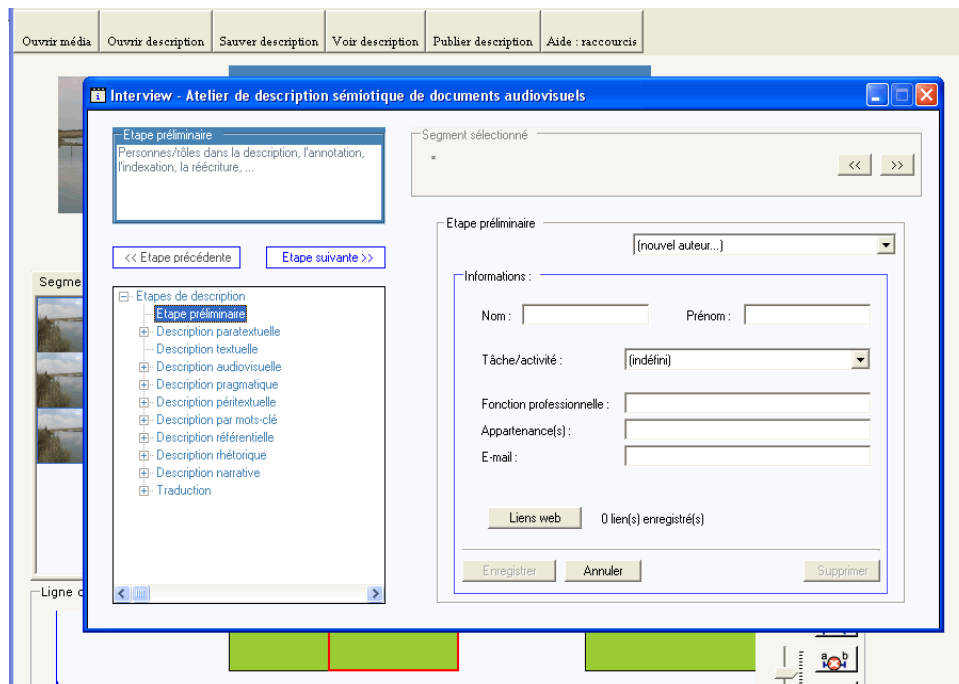


figure 13: The principal processing activities proposed by the Interview tool

1. The (audiovisual) document as a *layered entity* (this goes back to the semiotic notion of the sign as intrinsically composed of a content layer and an expression layer of the content) – both layers can be differentiated in more specialised layers ...).



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2. The (audiovisual) document as a *composed entity* which can be differentiated in several entities (such as, for instance and very trivially speaking, in the *introduction*, the *development* and the *conclusion* part of a book-like document) and which itself can be a part of a network of other entities and documents (such as, for instance, an audiovisual documentary as a *functional* part of a whole hypermedia documentation of the life-world of a group of people; cf. chapter 6).
3. The (audiovisual) document as a typified entity (this means that any document can be (at least partially) characterised as belonging to one or more types or genres of documents (for instance, a film document on the daily life of a group of people as a descriptive documentary, a narrated documentary, a historical documentary, a fictitious reconstruction, a staged drama, etc.).
4. The (audiovisual) document as an *affordable entity*. This means that any document is provided by traces that “certifies” its real or possible uses, contexts of uses - traces that are indications for its more or less high relevancy for specific contexts of uses, for groups of destinies, for specific objectives, etc. For instance, a fictitious reconstruction of the daily life of a group of people may be a wonderful document for specific purposes (make people aware of the cultural personality of an other group of people; make understandable the cultural differences by the means of an intrigue, ...), specific destinies (people far away from any understanding of existing cultural differences, people full up of stereotypical judgements on other habitudes and traditions, ...), specific uses
5. The (audiovisual) document as a produced entity. This means that any document is the result of an authoring process, a more or less formalized or, contrarily, free activity of producing and transmitting information about a given domain or object. Concerning (lato sensu speaking) pedagogical or potentially pedagogical document resources, it has to be stressed the importance of the vision (the view point) by the means of which an author (i.e. an individual person or a social group assuming the role of an author) handles a knowledge domain or object in order to explicit the author’s culture with respect to the learner’s cultural background (i.e. with respect to his/her knowledge and values as well as to his/her motivations and expectations as a learner).

It’s not the purpose of this paper to develop in a more systematic and technical way the implications of these five assumptions. Let us only stress here the fact that they are congruent with the vision of (re-)authoring as a



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linguistic and intercultural processing or versioning of corpus of documents as well as with the technical system named *Interview*.

Briefly speaking, figure 13 shows a list of principal groups of processing activities which have been identified and elaborated with respect to the above quoted five principal assumptions:

1/ A *preliminary processing phase* consists in the identification and presentation of the author or the authors of the (re-)authoring activities of a corpus of already given audiovisual files.

2/ The *paratextual processing activity* refers to the description of the identity of the existing audiovisual corpus, to its so-called meaning territory. This activity recovers more specific tasks such as the overall identification of the corpus itself (title; summary; global duration; language(s); etc.); the identification and presentation of the author(s) of the files composing the corpus; if appropriate: the identification and presentation of main protagonists (scenario writers, producers, actors, ...) and, finally, copyright issues concerning on the one hand the existing audiovisual files and on the other hand the (re-)authored products as well as their translations and adaptations.

3/ The *textual description phase* consists of two principal sub-phases: a/ of the identification and delimitation of relevant audiovisual segments within the corpus of existing audiovisual files, and b/ of the basic description of these segments (title, summary, principal language, audiovisual type of the segment).

4/ The *audiovisual description phase* recovers – if necessary or relevant – the systematic description of the audiovisual expression of the content developed in a previously identified segment. Extremely speaking, each visual, sound, speech, ... plan composing a segment can be identified and described such as or in relation with the other ones. Such a description can be very useful in the constitution of a library of reusable visual, sound, speech or again syncretic (visual + sound) plans.

5/ The *pragmatic description phase* recovers a set of for (u-)learning purposes very useful sub-phases. Indeed, it classifies the content of a given audiovisual segment with respect to its potential contexts of uses (such as in formal or informal learning situations), to its possible destinies, to its possible links with a curriculum, to possible previous intellectual requirements for understanding its content (i.e. recommendations of consulting first other segments, other online resources, ...); and finally to its added value for other – especially professional – issues.



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6/ The so-called *peritextual description phase* recovers all tasks concerned with the annotation, enrichment or enhancement of a given audiovisual segment – by the means of interlinking it with other resources, of producing structured comments, etc.

7/ The *key-word description phase* recovers the production of a semantically structured index by the means of on the one hand freely chosen key-words and on the other hand (if available) a constituted base-vocabulary of the domain of reference.

8/ The so-called *referential description phase* belongs definitely to the advanced description phases of an audiovisual segment and deals with the semantically rich description of an audiovisual segment by the means of a domain ontology. This means that in order to produce a systematic and coherent semantic description of one segment, the author either has to refer to a given thematic classification of the domain of knowledge or has to produce it himself. Even if this process is, intellectually speaking, rather complicate (and, as well known, always controversial), it is very often required for a good semantic classification of the segments of a given corpus, for defining semantically motivated access points to the chosen set of segments and exploration paths through them.

9/ The rhetorical description phase is dedicated to the identification of the principal speech acts and discourse genres by the means of which the content in a given segment is developed.

10/ the narrative description phase is dedicated to the positioning of a chosen segment with respect to other segments of the given corpus of given audiovisual files. This positioning is produced by a set of pre-determined so-called narrative (temporal, causal, rhetorical, ...) relations by the means of which the author is able to produce a truly new narrative, a truly new audiovisual document out of a corpus of given audiovisual files.

11/ Finally, the translation/adaptation phase recovers different sub-tasks divided on the one hand in more linguistic oriented activities (i.e. the translation of the content of a segment from the source language in a target language) and on the other hand more cultural oriented activities (i.e. the adaptation of the content of a segment to the cultural background of a target destine or user group). This means that there are different possibilities to perform these tasks: summarizing of the content; meta-linguistic translation by the means of the freely chosen key words or a controlled vocabulary; more or less free versioning of a given segment, etc.

These eleven phases recover the (re-)authoring process of existing audiovisual files within the Interview working environment. Naturally, this



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does not mean that a concrete (re-)authoring process has to pass through all these phases and sub-phases. As already mentioned (figure 12), there are different –more or less basic or, contrarily, more or less advanced options proposed by the Interview environment for re-processing given digital audiovisual documents.

In this sense, Interview is a good example of a working environment based on a systematic approach of the (audiovisual) document and its uses, which is needed for a totally user-centred (re-)authoring of existing digital objects enabling *any habilitated user* to transform them in – *from the habilitated user's point of view* ! – relevant (broadly speaking) learning resources. What has to be stressed here is that:

- the *criterion of relevancy* (i.e. of the belonging of a given digital object to the “class” of relevant learning resources) is determined by the habilitated user him/herself;
- the “*learning*” *qualification attribute* has to be understood in the intuitive sense given to this term, once more again, by the user.

It is true that the Interview environment has been defined and developed for the (re-)processing of audiovisual files. But the theoretical and methodological principals that govern the design and development of this tool are also valid for the (re-)processing of other types of digital resources (still images, texts, sound tracks, etc.). In this sense, it's a mere technical question to extend the Interview environment in such a way that the (re-)authoring of existing digital objects recovers not only audiovisual files but any other type of files. What is the important point here is that:

1. it's pragmatically speaking impossible to give a universally valid definition of what is a relevant (u-)learning resource;
2. the relevancy of a digital object within a (u-)learning context depends merely on the specificity of that context, the implied actors and the objectives aimed at;
3. any digital resource is a *de iure relevant* (u-)learning resource and it can therefore become a *de facto relevant* (u-)learning resource if and only if it's the concerned user or user group itself who can process it in such a way that it corresponds to their expectations, i.e. mainly to its role to satisfy an initial cognitive or axiological lack (figure 1).



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6/ A typical (re-)authoring scenario of a hyper-documentation for preserving indigenous cultural heritage

In order to exemplify again the for (u-)learning purposes highly central question of (re-)authoring of existing (or even yet to be created) digital objects (chapters 4 and 5), this chapter is dedicated to a concrete example taken from a tentative to develop a better understanding and to valorise indigenous cultural heritage.

6.1/ The general context

Public and private institutions, international organizations, NGOs (such as UNESCO), specialised companies and associations as well as the concerned actors themselves aim, since one or two decades, at a more systematic policy for documenting (especially: endangered) natural and cultural heritage of (traditional, pre-capitalistic, rural, ...) communities in the world in order to raise the awareness of existing cultural diversity in all human (i.e. intellectual and creative, technical and practical, moral and political, ...) belongings as one of the principal motors and resources of cultural evolution. The concrete results aimed at, are highly diversified covering:

1. on the one hand relevant object collection, preservation and exploitation,
2. and on the other hand methodologies, “vademecum”, services and also tools for collecting, preserving and exploiting such digital content related to the memory, preservation and transmission of (lato speaking) cultural forms of social groups or actors.

Concerning the first aspect – content collection, preservation and exploitation – typical concrete results are multimedia archives and libraries (composed of textual, visual, sound and audiovisual corpuses documenting or testifying a given cultural pattern or tradition), not only institutional but also (more and more) individual web sites and web sites produced by small, smoothly organized social groups (associations, social groups sharing the same interests and/or experiences, ...).



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In community heritage preservation and transmission different issues are raised. Besides the mere “museum-driven” approach (preservation, collection, showrooms...), typical issues related to this big activity are, among others:

- primary and especially secondary socialization and acculturation of the young generation(s);
- the education to the awareness of cultural diversity as a prerequisite for civil education and tolerance;
- the transmission of practical skills and knowledge;
- cultural diversity as a central factor in human evolution;
- the study of different ways of life, of different forms of inhabiting and organizing a social space or territory.

The – broadly speaking – *learning* contexts of such activities are also extremely different but sticking preferentially more or less to non-formal learning settings such as the completing of formal requirements of “official” diploma studies (such as of language studies, cultural studies, sociology, ...); personal studies and instruction; the use of “think tanks” and the individual opening to “new, creative ideas”; simply the stimulation of personal curiosity of the ways of life of people in the world; ...

Indeed there is a big “knowledge and – very broadly speaking – pedagogical industry” growing in this field that aims at the creative use of content related to cultural heritage for educating people by means of different genres of tools and services: interactive web sites, cultural CDs, electronic games, virtual voyages and explorations, interactive hyper-documentaries, digital films, etc.

6.2/ The “institutional translation” of (1)

Within this general context, the research and development service ESCoM (Equipe Sémiotique Cognitive et Nouveaux Médias) of the Foundation Maison des Sciences de l’Homme (FMSH) in Paris has the mission to constitute with the help of appropriate individual and collective partners a multimedia knowledge portal called “*Patrimoine Culturel Indigène*” (PCI; in English: *Indigenous Cultural Heritage*) dedicated to traditional (indigenous, pre-capitalistic, rural, ...) community heritage preservation and transmission such as, for instance, cultures and populations studied typically by ethnologists, aboriginals but also traditional rural mountain, ... communities in France or in Europe. This activity recovers several aspects, especially:

1/ to help engaged actors in the constitution of appropriate contents (through the production of mainly digital audiovisual, visual and sound resources);



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2/ to provide methodological and technological aids in the production, management and dissemination of such resource spaces;

3/ to provide also storage space and services of these contents;

4/ to assist the involved actors in the exploitation of such contents in form of the creation of “secondary resources”, i.e. of new resources based on a (creative) reuse or (re-)authoring of already existing ones (cf. the above quoted genres of services produced by the new knowledge industry: *interactive web sites, cultural CDs, electronic games, virtual voyages and explorations, interactive films*, etc.)

5/ to produce more specifically specific knowledge and pedagogical resources such as hypermedia dictionaries, courses, thematic hypermedia folders, etc.

The multimedia knowledge portal “*Patrimoine Culturel Indigène*” (PCI; in English: *Indigenous Cultural Heritage*) is a part of the Programme Archives Audiovisuelles de la Recherche (AAR) already briefly presented in chapter 3.

6.3/ The Huarpe memory project

This is the general and institutional context in which ESCoM, the *Programme Amérique du Sud* of the Foundation Maison des Sciences de l’Homme (FMSH) and the Argentinean writer and journalist Gregorio Manzur takes place cooperate in order to produce an online hyper-documentation of the Huarpe culture and language.

The Huarpe Indians and their descendents (specialised in sheep elevation) are leaving in the north-west of Argentina nearby the Mendoza region in the Andes in a very inhospitable ecological environment and under very difficult economic conditions. The actual territory they inhabit has been, formerly, a rich one but it has been the scenery of ecological catastrophes due to an uncontrolled migration policy in this region, an over-exploitation of the natural (especially water) resources of the region and also the reduction of the Huarpe Indians (as well as other, sometimes already disappeared communities) to social conditions more or less similar to slavery. Nevertheless, the Huarpe community possesses a very rich cultural (mainly oral) tradition and testifies, practically and technically speaking, an astonishing capacity to adapt and control their environment despite their triple big handicap: to constitute an extremely poor community, to leave in an ecologically very fragile environment and to face the arrival of the “Western”, “modern” morality and way of life.

The online hyper-documentation dedicated to the Huarpe community will compose a dynamic web site belonging to the multimedia knowledge portal “*Patrimoine Culturel Indigène*” (PCI; in English: *Indigenous Cultural*



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Heritage). This means that the Huarpe hyper-documentation will be accessible via one central access point (the Huarpe web site homepage). But at the same time, it will also be a part of the more general project aiming at the constitution of a hyper-documentation of the cultural heritage of (other communities in South America and elsewhere. Finally, the attribute “dynamic” means that the process of documenting the Hualpe culture is an ongoing one and that, consequently, the dedicated web site will permanently be updated.

The general content of the online hyper-documentation will be composed of sound tracks recording life stories of the “puesteros” as well as other orally transmitted stories; visual data (photos, drawings, cards, ...) of the community and its environment, linguistic data (records, wordings and a phonetic dictionary) and finally more particularly, audiovisual data documenting the natural and social context of the Huarpe culture (or of what still remains of it), Huarpe knowledge and skills, Huarpe habitats, ... and also the meta-discourse on Huarpe culture (from activists to scientists via the last surviving members of it).

In this sense, the dedicated web site is intended to become a hypermedia, tri-lingual (Spanish, English, French) “dossier” or folder with a real pedagogical and critical dimension. The principal services proposed by the Huarpe web site are:

2.1/ the *pedagogically structured* (classified, indexed, described, contextualised, commented and explained) multimedia content itself;

2.2/ *interfaces for a creative and “dramatised” exploration* of the Huarpe heritage (in form, for instance, of a *virtual travel* realised as an interactive hypermedia documentary on the myths and legends of the Huarpe culture, of the surviving strategies of the Huarpe in a almost waterless environment, of the Huarpe habitation, etc.)

2.3/ and finally simple authoring tools for registered people to reuse the material for pedagogical reasons (in creating, for instance, small annotated video-segments on a specific aspect of the Huarpe culture...).

These three principal services proposed by the Huarpe memory web site make the latter to an ideal – potential or already real – resource for a wide range of lato sensu learning situations (i.e. not at all limited to formal and institutionalised ones) as characterised in section 6.4.

Finally, these three principal services for transmitting the hyper-documentation dedicated to the Huarpe Indians bring us back to the above discussed questions of *(re-)authoring* of digital objects. Indeed, the production



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of a pedagogically structured multimedia content, of creative exploration interfaces in form of interactive hypermedia documentaries or video-dictionaries, etc. presuppose:

- 1/ the existence of such digital objects (in form of sound, audiovisual, visual, textual, ... data);
- 2/ and the possibility to deal with them with the help of appropriate tools and methodologies.

6.4/Characteristics of (u-)learning situations covered by the Huarpe hyper-documentation

In order to get a systematic and as explicit as possible idée of potential learning scenarios for which the Huarpe hyper-documentation (such as or in a (re-)authored form) is intended, the description criteria introduced and discussed in chapter two (cf. especially figures 2 and 3) will be used.

The Huarpe hyper-documentation itself will constitute, without any doubt, a valuable means for formal learning and teaching environments (for instance for studies in cultural sciences, in anthropology, in sociology, in language studies, in studies about oral literature, ... but also for studies in ecology, natural resource management, demography and migration policy, etc.).

Nevertheless in the following, the interest of the Huarpe hyper-documentation and its (re-)authored versions are presented only for non-formal (u-)learning situations.

6.4.1/ Learning motivation (the satisfaction of a cognitive or axiological lack)

This criteria refer to the general description of the critical situation (cf. figure 3) preceding the (lato sensu) learning situation itself. In the case of the Huarpe memory project, this means of how to define more explicitly the possible intellectual or ideological interest or lack or desire of a – so to speak – “learner” to become more acquainted with the Huarpe culture.

A/ Learner motivation type:

The motivations of the learner may be very different, following his/her objectives or desires to visit and explore the Huarpe hyper-documentation:

- 1/ simple curiosity of what Huarpe culture is and interest to become more familiarized with it;
- 2/ a (broadly speaking) political or moral engagement of defending cultural diversity;
- 3/ a (personal, collective, ...) search for historical roots and traditions;



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4/ the search of new life scenarios, new ideas of how to meet the world and the other in order to use such “solutions” for professional work (as a publisher, an artist, a pedagogue,...).

B/ Learner social category and age range:

No age range is excluded but the younger generation constitutes, nevertheless, the more privileged user group.

6.4.2/ Description of learning situation

This criterion refers to one of the four main characteristics of a learning situation *latu sensu* (figure 3). It is concerned by the description of the social (institutional) environment of learning and the implied roles.

A/ Social settings of learning situation:

The use of this hyper-documentation is for informal learning situations – in general out of school places. For instance, it is dedicated to people leaving in the Mendoza region and wishing to better understand the social and historical context in which they are leaving. It is dedicated to knowledge acquisition that typically takes place *out of the school*, that is *home-based* and/or “*community based*” (i.e. which takes place in special social places such as youth *clubs*). The principal objective of this hyper-documentation is to make more sensitive to cultural differences younger people and also people having the possibility to travel or to meet other communities (cf. the socially and culturally important question of a *sustainable* and *responsible tourism*). One of its main purposes is to develop the curiosity for other possible scenarios (life worlds) of how to inhabit the world, to organize the relationship with other people, to exploit the natural environment, etc.

B/ Learner role or occupation:

The learner profiles are very disparate:

1/ there may be learner groups formally defined as students engaged in a curriculum;

2/ but most of the users are “learners” only in a broader, non-formal sense: people wishing simply to satisfy an intellectual curiosity, people in search of traditions and cultural manners to inhabit the world and to deal with the other; people having a professional interest in the Huarpe (and other indigenous) culture and heritage; etc.

C/ Learning setting (place):

The Huarpe hyper-documentation is not dedicated to a specific formal learning place (such as a classroom, a course room, etc.). But, provided with the necessary technologies, it fits well with any non-formal spatial setting: clubs, home, professional work space.



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D/ Learning setting (time):

Given the fact that the Huarpe hyper-documentation is not constituted for a specific curriculum (even if it can be used within a curriculum), the availability of it has to be guaranteed all the time. It is, indeed, impossible to anticipate the periods of working with this hyper-documentation even if there exist typical temporal rhythms of the occupations of each user type which privilege periods and moments as typical ones for the work with this hyper-documentation.

E/ Learning support:

Typically, no teacher is present during the consultation and exploration of the Huarpe hyper-documentation by a curious user. In informal home based inquiries, parents or other adult members of the family can be supposed to be present and to help children not only in the accessing but also in the correct appropriation of the material. In community-based settings (for instance in youth clubs), the Huarpe hyper-documentation should enable and facilitate young people to discuss among them questions related to this site. Finally, an other non-formal setting is provided by the professional environments (for instance : publishers or journalists) in which the Huarpe hyper-documentation occupies the role of a “think tank” or again a potential pool for “new, creative ideas”, etc.

F/ Learning background requirements :

The online Huarpe hyper-documentation is for any person, no matter his/her intellectual or scientific background.

G/ Link to curriculum:

The online Huarpe hyper-documentation is not linked to a curriculum but – as already mentioned – its content and its services can be used within a high school or university curriculum. For instance, a particular aspect of this hyper-documentation concerns the popular believes in the Mendozinean area (such as the *India Muerta* or the *Gauchito Gil*). This theme is treated in every curriculum of cultural anthropology, folklore study but also in studies of religious systems, etc. In this sense, the Huarpe hyper-documentation constitutes a possible resource centre also for formally defined diploma studies.

6.4.3/ Resource localisation

This criterion refers to the description of one of the four principal activities of a learning situation (*lato sensu*) – the description of the localisation, composition, organisation of relevant resources for the learning.



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A/ Source(s) of material :

The principal sources of the material of which the Huarpe hyper-documentation is composed are the following ones:

1/ The multimedia portal “*Patrimoine Culturel Indigène*” belonging to the Audiovisual Archive of Research (AAR) programme of ESCoM in Paris;

2/ Institutional web sites (especially UNESCO, NGOs specialised in indigenous heritage preservation and transmission);

3/ web sites of research institutions specialised in questions related to the Huarpe civilisation, the region the life in, the cultural, social and linguistic families to which they belong, etc.

4/ the personal archive of the Argentinean writer Gregorio Manzur;

5/ the personal archives of members of the Huarpe community or of people (social workers, ethnologists, ...) leaving with them;

5/ communal archives of the region and the city of Mendoza as well as of other cities, museums, etc. of the region;

6/ new material produced by a small production team of ESCoM that will – with the help of the Argentinean writer Gregorio Manzur and his social connections – document as systematically as possible the social, cultural and linguistic dimension of the Hualpe community.

B/ Types of content resources accessed (= hypermedia documentation of the Huarpe community):

1/ online audiovisual files;

2/ online visual files (photos, drawings, ...);

3/ online textual files;

4/ web sites, interactive documents,
etc.

C/ Technical device(s) needed in order to access the Huarpe hyper-documentation :

Simple desktop computers with an Internet access.

D/ Technical environment :

1/ for the access and exploration of the hyper-documentation: Internet browser; media player and software for visualizing specific formats (such as flash or pdf);

2/ for the work on a specific corpus of the Huarpe hyper-documentation in order to (re-)author it in a more specific, user appropriated form: a video segmentation, indexing and annotation tool (such as, for instance, *Interview* already presented in chapter 5) as well as simple publishing templates (for producing, for instance, specific narrative paths for exploring a part of the Huarpe hyper-documentation or for producing also “virtual interactive films”).



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6.4.3/ Appropriation activities

This criterion refers to the description of one of the four main activities of a learning situation (*lato sensu*) – the appropriation (the “learning”) of the required or needed content for satisfying an initial (cognitive or axiological) lack.

A/ Learner activity:

The learner activities are twice-folded:

1/ They are restricted to the typical activities for accessing and exploring a hyper-documentation of a specific cultural pattern or tradition (such as the already above quoted popular believe in Gaucho Gil). These activities can be completed by other ones consisting in discussing the content via a web forum or by inviting others to appropriate it.

2/ They also may cover the active reuse of the proposed content in order to republish more personalised versions of it on the Huarpe hyper-documentation website.

B/ Interactive functions needed/used by learner:

Concerning the appropriation activity understood as a form of an active exploration of the Huarpe hyper-documentation (with or without the help of more specialised narrative accesses and navigation paths), the interactive functions needed are standard ones.

A specific case, nevertheless, is that one of narrative paths organised in sequences that only can be accessed if specific conditions are fulfilled. This means, for instance, that a narrative path (in form of a game such as the “treasure hunt” or a course composed of different lessons not freely accessible) is provided by tests, exercises, etc. through with the “learner” has to acquire the necessary rights to leave a given sequence in order to attain a new one. In this case, more elaborated interactive functions corresponding to exercises, tests, etc. have to be provided.

6.4.4/ Appropriation validation

This criterion refers to the description of one of the four main activities of the learning situation (*lato sensu*) – the validation of the appropriation itself of the required or needed content for satisfying an initial (cognitive or axiological) lack.

A/ Learning approach

No particular learning approach is proposed. But the exploration of the Huarpe culture is based on different genres:



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1/ the genre of a *multimedia library* proposing (visual, sound, audiovisual, textual, ...) resources to a given theme or question (such as the already quoted Gauchito Gil practice);

2/ the genre of *pre-established narrative navigation paths* simulating a specific form of appropriation of a cultural theme related to the Huarpe tradition (for instance: the understanding of the Gauch Gil practice through different “stages”, that the user – like in a documentary – has to pass through);

3/ the *participative genre of communication* (with other users of the web site) on specific topics of the documentation or again on other related themes;

4/ the genre of *user produced documents* (such as user produced mini-sites, user produced virtual films, etc.).

In combining these four genres, a visitor of the Huarpe hyper-documentation website should have a good opportunity to become more aware of questions and problems related to cultural diversity and the respect of it.

6.5/ (Re-)authoring issues

With respect to the technical characteristics of the Huarpe memory project in form of a hyper-documentation (cf. above, section 6.4), let us again briefly summarize the principal (re-)authoring issues that are necessary for maintaining the relevancy of this documentation for a wide (and open) diversity of (u-)learning issues. As shown in figure 8 and discussed in chapter 4, the (re-)authoring process

1. Relies on an existing digital data base
2. And produces, out from this existing data base, a (partially) new one.

Concerning the Huarpe memory project, this means, that the existing digital data base is composed of data as specified in section 6.4.3:

1. The data are coming from *different sources* (from the multimedia web portal “Patrimoine Culturel Indigène”; from the personal archive of the Argentinean writer Gregorio Manzur; from research web sites; ...).
2. These data are *textual* data, *visual* data (photos, maps, drawings,...), *audiovisual* data (video clips) and sound data (records of conversations, etc.).
3. Moreover, they are either already in a *digital form* or have yet to be *digitized* or even have to be *created* directly as digital objects (cf. the mention of the field excursion of a small production team in the San Juan region in the south of Mendoza)

Together, they constitute the principal parts of the Huarpe hyper-documentation web site. But in order to make them accessible and assure their exploration by as different as possible users, they have already to be processed



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(i.e. – lato sensu – authored). In leaving out merely technical questions (chose of file format, codecs, diffusion technologies, databases,...) this means, for instance, that:

- each data has to be described and indexed following a given description format;
- especially linguistic data and more generally audiovisual data have to be provided with translated versions in Spanish, English or French;
- all data have to be organised in a general and global organisation system;
- the visualisation of the data as well as of the web site itself has to be designed and realised;
- specific access and navigation facilities have to be designed and realised (search engine; thematic catalogue; aids and hints headings; ...);
- legal questions of visualising and possible reuse have to be solved;
- etc.

Naturally, the existing hyper-documentation is not a static one. As all documentation resource centres, it evolves: new data will be introduced in the Huarpe hyper-documentation web site and, especially, re-authored forms of parts of it will enrich its base.

Indeed, as already extensively discussed in the previous chapters, the data material like that of the Hualpe hyper-documentation web site, are potentially relevant (u-)learning resources. This means that for given occasions, they may possess, indeed, a good relevancy for the satisfaction of a given cognitive and axiological lack – they may constitute, such as and in their given form, already (u-)learning resources.

Nevertheless, for other (u-)learning occasions they may only possess a potential relevancy, i.e. a relevancy if and only if they undergo some specific reprocessing, i.e. some specific adaptation in order to fit with the users needs or desires, with the users learning motivations and objectives and/or with chosen learning strategies (appropriation strategies, evaluation of appropriation strategies, etc.).

Concerning the specific case of the Hualpe memory project, this means that possible reprocessing or, as we prefer to say, (re-)authoring activities will certainly aim at the cultural and linguistic adaptation of given material (i.e. translation in Spanish or French; explanations of the cultural background of the provided content; ...). But other very possible (re-)authoring purposes may try to awake the curiosity of the learner, his/her interest to understand better specific aspects of the Huarpe culture, the extreme ecological and economic conditions under which they have to leave, their practical

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intelligence to deal with their environment and to control it; their very specific understanding of communication; etc.

For such and other objectives, (re-)authoring activities of the given material have to be performed. Figure 9 identifies the principal aspects that have to be taken into account in order to define, to control and to realise with success such a (re-)authoring process. It's not the objective of this paper to provide a detailed scenario of this, but figure 14 (copying the structure of figure 9) summarizes the most important ones.

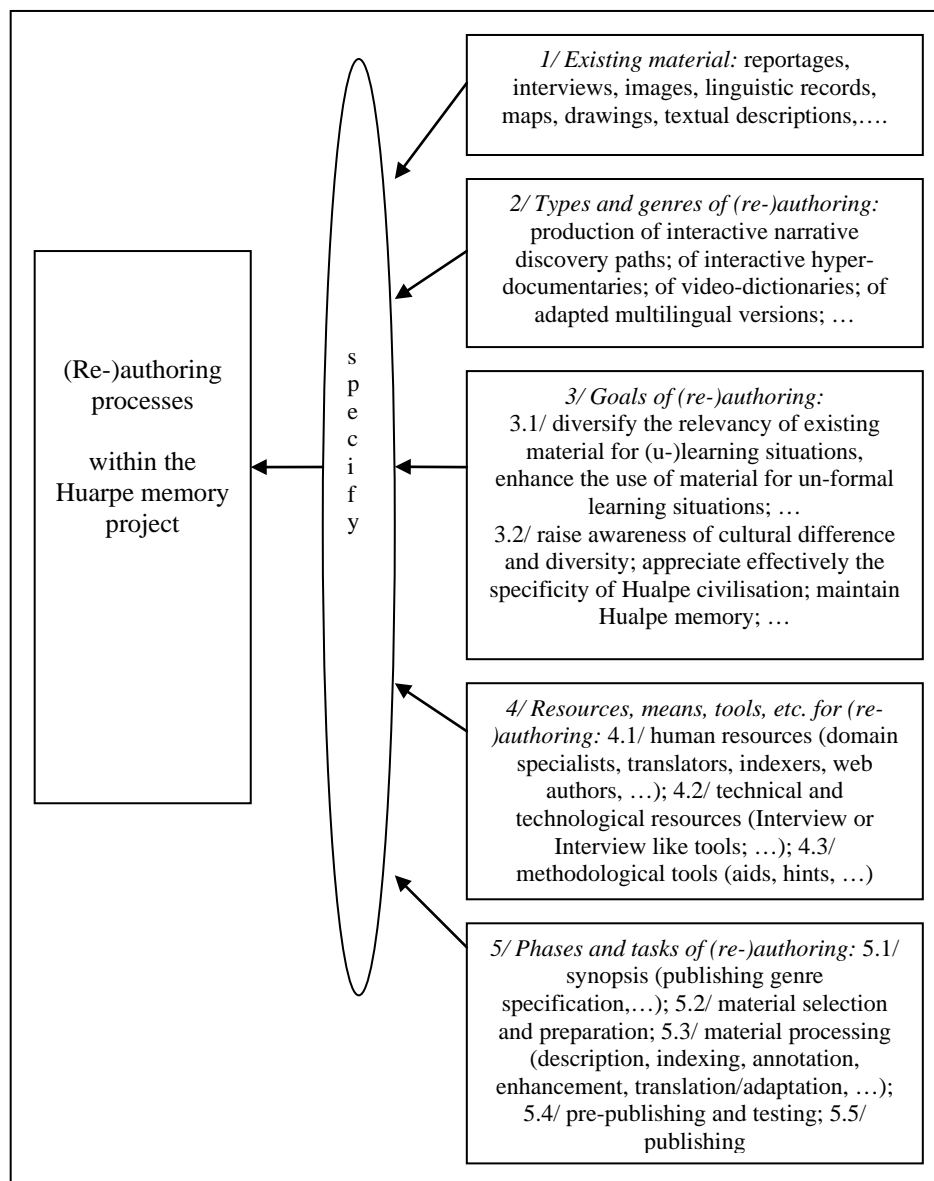


figure 14: In a nutshell, the principal parameters determining the (re-)authoring activities within the Huarpe memory project.



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In a nutshell, figure 14 shows us the principal parameters that determine the (re-)authoring activities within the Huarpe memory project:

1. the existing material to be (re-)processed;
2. types and forms of reprocessing existing material;
3. the objectives of the (re-)processing activities;
4. the resources and means of the reprocessing activities;
5. and, finally, the specific phases and tasks.

Naturally, all these parameters have to be defined and explained in much more detail for becoming a real project description.

But the goal of this presentation here is another one: to show, with the help of a concrete example, what (re-)authoring is and for what reasons it has to be taken seriously into consideration in the context of the production and dissemination of resources relevant for an a priori open diversity of *lato sensu* learning situations as presented in chapter 1.