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# ARCHITECTURES AND EARTHEN CONSTRUCTIONS IN ARMENIA: WHAT STRATEGIES?

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## Abstract

As part of an architecture thesis in co-supervision with UNACA, the objective of this research is to raise awareness of the various actors of the society to the heritage of earthen architecture in Armenia, to the qualities of this *primary building material* and to its potential for sustainable territorial development. What strategies will transform the population's attitude; recognize this architectural "heritage" (in the meaning of legacy) as architectural "heritage" (with the meaning of patrimony) and this material as a new possibility in the development of eco-responsible architectures?

A first *action research* method involving Armenian and French university partners allowed for the beginning of an inventory of the many heritage of earthen architecture: archaeological remains and vernacular constructions. Regions rich in earthen habitats have been identified thanks to bibliographic sources and especially to interviews with inhabitants and heritage managers.

But if the first intention was, through this inventory, to demonstrate to decision-makers the importance of this architectural heritage and its environmental issues, I realized that this goal would take a long time, without guarantee of efficiency!

This awareness led me to shift my strategy upstream so that the concerned actors get involved, appropriate and value this inventory to reconsider this material, which is beginning to be recognized in Europe.

While questioning the epistemological basis of this approach, I sought the arguments for this strategy which combines theoretical research, societal transformation and the initiation of *alternative* solutions - on the basis of the "principle of responsibility" of H. Jonas [12], applied also to scientists; but also to better understand how to develop, maintain and disseminate the strategies for their continuation.

Based on different currents of thought - the pragmatic philosophies, the Chinese thought *translated* by F. Jullien and the creative approaches of T. Ingold, I will propose a new definition of this research's modality that engages particular social skills.

## 1 Introduction

Architect, teacher-researcher in a militant posture and committed to a sustainable living in line with my values, I started in 2014 a thesis in international joint PhD on the earthen architectures in Armenia, their knowledge, and recognition. The goal is to change the way we look at these heritages and to allow their development - by reactivating local know-how and traditional knowledge - to promote innovative combinations of this material in contemporary constructions.

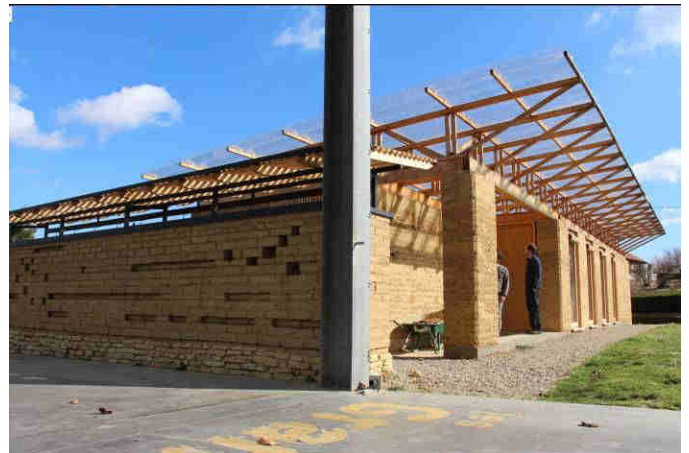


Fig.1 Amàco workshop built in rammed earth

The article specifies the context of this research - deployed for a decade - in the framework of Franco-Armenian educational and scientific cooperation and discusses the actions initiated: university partnerships, institutional cooperation, political rapprochements ... The central part of the argument questions how this research has become "action research", how the adopted "pragmatic strategy" can be considered as a "*making*", in the sense of T. Ingold [11]. We will also seek to highlight the epistemological basis of this "*adventurous*" approach [15] which can only be reported afterward and whose effectiveness has allowed the initiation of autonomous dynamics.

## 2 Franco-Armenian context, expected results

### 2.1 Opening of a new field of investigation in Armenia



Fig.2 Armenia recognized for its tradition of stereotomy: Khor Virap Monastery.

It should be noted that my dual Armenian-French culture, at the East-West interface, and an interest in China's practices, of its historic pragmatic culture - the Armenian culture being probably closer to the Chinese one that we can think *a priori* [2] -, have fostered these synergies between Armenia and my environment Lyonnais / Rhône-alpins. A dual training in architecture and philosophy will also help improve to take a step back from this action research's "making".

This research has opened a new field of investigation on Armenian territory, in the field of the architectural and technical cultures of this country's earthen constructions. Indeed, "Armenia has long been known and recognized for the very ancient tradition of mastering stereotomy and its uses in stone architecture. It has preserved until today among the oldest churches with stone dome and specific monasteries. Various recent historical and archaeological works show its significant contribution to this plan throughout Europe and the Middle East, both through the circulation of ideas and the fact of the wanderings of Armenian master builders on the continent." [18]



Fig.3 Uses of stereotomy in stone architectures

But this excellence has probably been a brake on the taking into account of earthen constructions, for different reasons: first the stone is omnipresent, remarkably worked (tuffs rich in colors, finely carved basalt, travertines), dedicated to the queen of the arts that is architecture and more specifically to the churches, monasteries therefore to the religious sphere, that of the sacred, which devalues even more the other traditional materials, especially the earth. Indeed this one without protection disappears quickly enough and when it is protected by a coating, becomes invisible.



Fig.4 Ancient habitats in the center of Yerevan in adobes

The maintenance of the religious heritage in stone - to restore - already a heavy load and is considered priority over earthen heritages. De facto even in European countries, the heritage recognition of this material is rather recent.

### 2.2 Objectives: raise awareness and campaign in favor of earthen architectures

In this context, the thesis problem raised this question: under which conditions and how earthen architecture could be reassessed in Armenia? The advanced research hypothesis is that by initially preserving and highlighting the *earthen archaeological heritage*, it would then become a lever for changing the way people look on *vernacular earthen heritages* - unjustly considered fragile and associated with the poverty.



Fig.5 Workshops for enhancement of the earthen archaeological heritage

The thesis aims to raise awareness and consequently to mobilize the Armenian authorities on this topic, whether political, economic, cultural or academic - with dissemination strategies in progress [18].

By thus drawing attention to the qualities of this ancestral material, it would be possible to open up new dynamics in the perspective of eco-responsible architectures - in reference to frugal innovation movements [3] that are developing in some international networks with the primary materials, also called bio-sourced or ecological. [1]

We first explored different methods of training for the earthen architecture in Armenia and France in higher education (UNACA, ENSAL), but also more widely, with other public (elected, professional).



Fig.6 Jury at ENSAL Master 2 projects on Eréboutni and Lyon

The objective being that eventually the knowledge generated spreads and induces the reactivation of know-how also in the local populations. At the same time, we have also begun surveys of these populations to collect data on constructive cultures.



Fig.7 Vernacular habitat in adobes (photo S. Monnot 2016)

### 2.3 First step: checking the existence of these heritages

A first state of the publications, interviews with architects and heritage managers were used to target communities rich in vernacular earthen habitats and a first step of the work was to go to the field, to check the existence of this heritage in Armenia.



Fig.8 Adobe house, Haythagh village (photo S. Monnot 2016)

Exchanges with the inhabitants have shown a real loss of constructive cultures and local know-how.

With techniques of location, surveys (plans/cuts) on the spot and photographs, we have described the diversity, richness, characteristics of these heritages, and alerted to the urgency to intervene, to keep at least some representative examples.

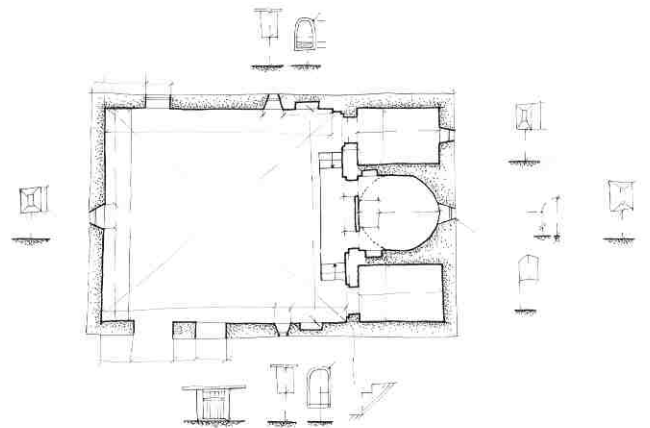


Fig.9 Norashen church (1830?), survey conducted by Suzanne Monnot with Hugo Daguillon, Anahit Safaryan



Fig.10 Ayguévan church (photo S. Monnot 2016)



Fig.11 Hovtamedj church 1877 in Ararat's plain (photo S. Monnot 2016)

## 2.4 What effective strategy to transform the view on these heritages

During these investigations, I also became aware that this time-consuming work, even if it is done as part of a co-supervised thesis, is likely to remain in a library fund and ultimately have little impact! This is often the case for French archaeological missions working in Armenia, whose excavation reports, written in French, are poorly translated and not taken into account [5].

My initial problem then shifted, questioning further upstream how could the action of a single person engaged in a thesis - beyond the production of knowledge, which remains one of the challenges of a thesis and relying on the legitimacy conferred the scientific approach - have an impact on a larger scale? In what kinds of ways to engage more efficient actions to make the actors concerned, to involve them in interactive processes? How to do this concretely so that these actions in Armenia (but also in France) then stimulate a set of transmissions' processes, researches, rediscovered, not only at the university levels but also more widely the managing institutions, the decision-making authorities and the public opinion...? What strategy should be adopted for synergies to

take place in various spheres of society, so that others invest in these issues, otherwise the process may run out of steam, fall back?

## 2.5 Adoption of an *action research* approach developed by "making"

These questions, the various opportunities following several months on the ground and many contacts, led me to a new awareness. It is certainly a transformation of the look towards this earthen building material that must be aimed at, with actions on a larger scale. By fostering original dynamics, synergies will be created; but it is also an objective to be considered in the long term, a diffusion on various fields (French and Armenian), with a sometimes indirect impact. My actions have thus diversified: for example through the AURA region, the "Métropole de Lyon" and the ENSAL, I was led to participate in major public events. Little by little, a web of relationships was formed (French Ministry of Foreign Affairs, French Embassy): we organized symposia and exhibitions with French and Armenian students, which in turn enabled the mobilization of architects, UNACA's teacher-researcher, management bodies and politicians...



Fig.12 Symposium in 2015 and publication of acts in 2018

Although the objectives and expected results have remained targeted, the approach has reoriented towards more listening: exploit the "situation potential" [], foster the use of occurrences "weaving" with them. It was no longer a planned strategy, applied with a goal defined in advance, but rather an approach that could be described as "adventurous" [7]. It is a

methodology that has transformed the mode of action of initial research into an "action research" of another order.

Therefore, the central part of this article will question the nature of this mode of action: how to think it? It will present arguments on the basis of knowledge formed in other disciplines: pragmatic philosophy, anthropology. Finally, it will seek to shed light on the epistemological basis of this new approach, its methodological coherence and its relevance in intercultural exchanges.

### 3 What epistemological posture?

#### 3.1 Interest of an epistemological questioning

The academic interest of this research is to start from my specific intercultural situation and to carry out an epistemological reflection in the architectural field, epistemology being defined as "the way in which scientific knowledge is acquired and validated" [10]. The objective will, therefore, be at two levels:

- at the individual level, this work would allow me to gain understanding and therefore clarification in relation to my research posture, because research is inseparable from an epistemological position.[10] In fact, it is also a way of presenting international cooperation in a French ENSA, but practiced by a teacher-researcher born in Armenia.

- at a more general level, this work seeks to enrich the scientific discussions on the epistemological support of action research in the ENSA (National Higher School of Architecture), the latter being still in a dynamics of disciplinary foundation because of its relative youth, in France at least: this applies in particular to the doctorate in Architecture, with major epistemological stakes.

#### 3.2 Philosophical rooting of this research's "making"

As mentioned above, methods mobilized in our research, have not been defined previously planned or been a theory upstream: they proved "in and through action". In fact, the necessary critical distance is difficult in an action-type search: how to rethink what one has often done "in the heat of the moment". How to identify and think the strategies "operative" in this "adventurous" approach?

We can therefore only think of it afterward (after the work done) as Hegel recalls for philosophy: the owl "takes flight at dusk" [9]. Allegory of philosophy, the owl represents the "delay" taken by the consciousness on the action. It is all the ambivalence of this reflection on the action research's approach (which should actually be called "action-recherche" and not "recherche-action" in French). So I will borrow arguments from the philosophy to clarify my posture and its evolution.

We can't discuss these approaches without citing pragmatic philosophies Pierce, James, and Dewey mainly to the experiences role: it is in Dewey's wake and from the 1970s that the "experiential knowledge" [17] has become established in the French social discourse. Its success is indirectly linked to the support of associations that wanted to

enhance the experience of the disadvantaged people, experience "lived", "action"...

Closer to home, the anthropologist Tim Ingold in his latest book defends the pedagogical, epistemological and creative value of situated practice. "Making" is seen as "a process of growth that places from the outset one who makes as someone who is in a world of active materials" [11]. The making process then consists of joining with these lives in the common task of fashioning a sustainable world. His image of the kite makes it possible to understand the interaction between *the person running and the kite flying*: [11] the activity of the person is listening and she acts in *correspondence* with the air, the environment, for a *dance with three*.

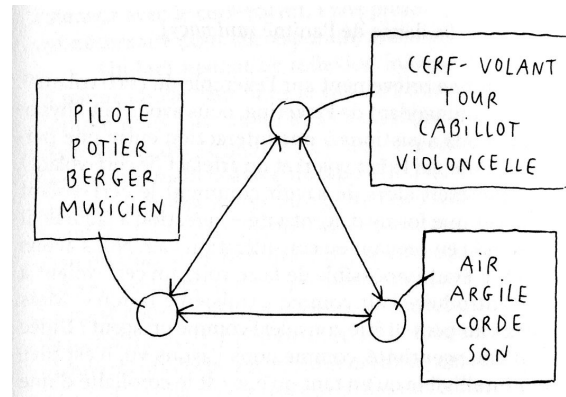


Fig.13 The dance of agentivity.

Our research has really progressed in this interaction "where activity and passivity are interlaced" [11] objectives appeared, actions/strategies were deployed as and when meetings with actors, contextual opportunities, and their agentivity... But can we conceive of an empirical mode of action-research without questioning its effectiveness?

#### 3.3 Efficacy: cultural notion and issue for action research

It is in the philosophical approach of the sinologist François Jullien that this research finds arguments. It is a question of the nature of the effectiveness: "or how the human intervention manages to connect itself with the propensity of things and allows itself to be integrated?" [13] - this posture is reminiscent of Montaigne's "à-propos" strategy, thinker of the moment, of the "occurrence" [14].

Traditional China has developed a relationship with efficiency, different from what the Greek tradition has transmitted (mainly with modeling and finality). "The Chinese thought of efficiency, indirect and discreet, relies on the situation potential and induces "silent transformations". It always seeks to promote and associate with the natural course of things: the human action "seconds", it accompanies this transformation as a gardener accompanies the growth of plants and promotes the best conditions of its natural development [13].

We refer here to a Mencius's metaphor: to accelerate the growth of his plants, a gardener pulls on them, obviously, they fade and die. Therefore, the well-informed gardener

favors the rooting of his plants and their development by working their environment with patience and discretion, allowing time to work - that's how effective it is, suggests Mencius.

In *The practice of China*, André Chieng quotes Jullien: "from the strategic point of view that is his, because it has not widened a cleavage between the world and consciousness, (...) all for it being case of process (...) the Chinese thought did not hesitate to think the manipulation in the upstream of the process". And he adds: "In other words, China does not just wait for luck, it provokes it, or at least it tries to work as far upstream as possible so that the process brings the desired result, not by a direct action, by a geometric design (the straight line is the shortest path between two points), but by a "hidden" action, which because it is hidden is all the more effective". [4] [Translation].

For our research, we have therefore tried to practice listening to the potential of the situation and to "connect with the propensity of things and allow ourselves to be integrated" by working upstream to initiate these processes: - in particular in 2016, with more than six months on the Armenian field and contributions for the 2016 Terra Congress in Lyon, - but also with participation in the 3rd meeting of decentralized cooperation in Yerevan with the involvement of UNACA, city officials and urban planning agencies of Lyon and Yerevan, etc.



Fig.14 Terra Lyon 2016 Congress: a delegation of 8 Armenian personalities was received during an evening "Armenia guest of honor of Terra 2016", 5 Armenian scientific papers were presented during the Congress.

### 3.4 Displacement: "l'écart" to make dialogue cultural relations / tensions

With the story of Mencius gardener, one can conceive how Chinese thought understands the development of the plant, what a look it takes on its "living". The plant is apprehended as a transformation process in-between: the sky and the ground (two foreign terms). The interest of this way to see things lies in its ability to create tension and maintain the opposites in a vis-à-vis relationship. Thus this "relational tension" - disturbance, derangement - suggests "the thing" in its process of transformation (and internal regulation) with its environment.

André Chieng in the chapter *Virtue of Contradiction* [4] discusses this aspect: "China gives opposition-correlation signs an entirely different utility: that of representing the functioning of the world."

It is in this "écart" that a "between" appears - which the Chinese also call "center" - where "living" can naturally unfold [15]. Even if it is not obvious for the Western mentality to understand what the "between" is - emptiness acting - the Chinese attitude consists in looking for the situations of setting in vis-à-vis so that the "displacements/lags" work in an autonomous way. [6]

By putting the question of two concepts or two cultures in these terms of "écart", F. Jullien uses this opposing/tension of the different ways of thought. Thus this activates a lively operation of thinking, the generation, and regulation of spontaneous processes which happen in this intercultural translation work.

## 4 What kind of action research?

### 4.1 Redefinition of this "action research" with these notions

In concrete terms, these different notions - accompanying the propensity of things, making work the "écarts" and to remain available, - make it possible to better understand the operating methods mobilized in this research.

Very often the actions consisted in putting vis-à-vis the forces involved: the different actors, cultural, academic, and institutional. Different types of events, symposia, thematic exchanges, student workshops, exploited the double affiliations and confronted them - put in tension - from situated problems (the Kond district, teachings on earth material, the sustainable development of the territories, the ecotourism) to engage the different dynamics. For example, to bring together French students/teachers (Ensal) in Armenia with students/teachers from UNACA, the staff of the urban planning agency of Lyon with those of Yerevan Project or the rural mayors of France and Armenia, the city hall of Lyon with that of Yerevan ...

It is indeed all these different situations, their discrepancy, sometimes their opposition - so their interaction and tensions - that have sometimes made possible synergies, deployment in different institutions and environments. The result is the constitution of a network and/or its activation.



Fig.15 Assises of Franco-Armenian decentralized cooperation with participation of ENSAL and NUACA Yerevan 2016

These meetings are always a formative experience, trigger processes on both sides, dynamics that then, often feed on themselves "naturally", but must also be maintained.



Fig.16 Synergies between Armenia and my environment  
Lyonnais / Rhône-Alpins

#### 4.2 From action research to transformation research

This mode of understanding - valid for all domains in China - by the fact that it recognizes the phenomena observed, a natural ability to deploy autonomously, as soon as they result from a relation/ tension; gives human intervention another role - a "second" one - and thus helps to consider efficiency differently. We will recognize here what symbolizes Chinese thought, *Wuwei* - non-action or action through inaction...

But if we do not act, what do we do? The key word of Chinese thought is "transformation" (*hua*). Not to act but to transform (...) Chinese thought thus leads us to conceive what transformation is in the face of action [13] [Translation]. The author systematically opposes them both: the action because it is momentary (even if this moment may last a long time), local and referring to a subject-I (which can be collective) it always stands out from the course of things. So she notices herself. But transformation, thought in an inverse mode, is global, extends over time, progressive and continuous: "it refers less to a designated subject than it proceeds unobtrusively by influence on an ambient mode, pregnant and pervasive. So the transformation is not visible, we only see the results. [13] [Translation]

Finally, the key word of this research methodology is *transformation*: thanks to these epistemological precisions, we can characterize this approach not as an *action research* but as a *transformation research*.

#### 4.3 What interest to think in terms of transformation research?

Is it here a paradigm shift, a new way of seeing things? To think this type of approach with a theoretical perspective seems important to us for various reasons.

In this period that we call Anthropocene, and in a context often perceived as an ecological crisis, adding to the possibilities of the digital age (social networks, coworking, forums, participation, and so on...) access to knowledge and

the research's making are deeply changed. Indeed, more and more scientists are not only seeking to produce knowledge but are also engaged in militant postures to guide research and support society towards "alternative" modes of thinking, of acting, using the resources of the planet. Among them, the territory planners and architects of the laboratories, such as CRAterre [8], Amàco for example [1], as well as those mentioned at the beginning of our article (networks of frugal architectures ...) have taken steps which seem to us closer to the *transformation research* than *action research*.

For these recent modes of "scientific exploration", their performance being linked to the use of collective intelligence, to think these transformation/research processes is also to think of resources for creativity and to promote more eco-responsible solutions.

However, Western thought is not well equipped to think about transformations. Relying on other cultures - China, for example - allows for questioning and revealing our unthought; the articulation between the two cultures is also to be built... Finally, to account for transformations is difficult: how to represent *silent transformations* [16]. This issue of representation will be to think too.

## 5 Conclusions

Returning with Tim Ingold, we will highlight three differences between the two types of research:

- in the *transformation research*, after having learned what I had to learn, "I trace my own path by moving forward while reflecting on this first experience". Unlike in an "action" research framework "I never stop to take a look back on the collected material to uncover trends and patterns".

- in the transformation research, "it is about studying with and to learn from, it opens a process of life that involves a transformation of the process itself". While "action" research: "is a study of and learning about, whose results obtained in the long term are the result of a selective report responding to a documentary purpose". [11] [Translation].

"The movement that guides the first project is primarily transformational, while the imperatives of the second project are essentially documentary".

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