Knowledge acquisition or manifestation of the thought?

Cathedral builders and knowledge acquisition method designers

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I) *Where conformity, superstition and laziness get on well with each other*

When, as teenagers, we visited the historic site of Vaison-la-Romaine in Southern France, the discovery of Roman capitals buried under the foundations of a mediaeval church was really astounding. How, besides re-using full blocks of the antique architecture, the builders dared reduce the most worked Roman stones to the humble function of backfill? Have new builders become totally disrespectful towards the Ancients?

1° The " glorious laziness" of cathedral builders

Cathedral builders risked their good name, because of this opportunistic laziness - they installed their building in place of a monument which was hidden and finally destroyed.

Later on, in Sicily, Andalusia, Syria, Greece or Tunisia (to cite only the Mediterranean area), we understood that the Ancients proceeded in the same way: what we observed at Vaison-la-Romaine was not an isolated case.

We were obliged to bow to facts while going beyond the simplistic image of an "aesthete" builder who pays homage to predecessors in a disinterested way through his architectural work.

We had to understand that the dismantling of a monument with a view to building a new one resemble more to a form of knowledge transmission than to a "totemisation" of the existing edifice.

The builder's radical laziness leads him to dismantle the old edifice for re-using the materials. But, incidentally, the builder is allowed to appropriate the knowledge which governed the original assembly. Unlike true destruction, a kind of "undoing the construction" goes together the reverse engineering method and is accompanied by an accumulation of knowledge coming at the right time, i.e. when information on the new monument can be invested in the new one.

The obvious laziness of cathedral builders is not only an effort-sparing technique, but an efficient way for transmitting knowledge, in praise of the eternal builders.

2° The "blazing conformity" of worship form founders

It was also necessary to admit that a cathedral was not only a work of art, but, essentially, a place of gathering which obeyed worship needs.

This case also was disappointing for us - we learned that the new form of worship borrowed from the old symbols for constituting a new religion, without any effort dedicated to image renewal. Fragments or even whole blocks of the old practices and liturgies became the ground of a new belief!

So, Israel borrowed from the Egyptian symbols during the Exodus, and Paul of Tarsus tried to find a new meaning for circumcision and consumption of unclean animal flesh.

But, while discussing on the conformity of new religion founders, we forget that it is easier to bring a population, already addicted to a form of worship, to a new religion. To found new rites, the re-interpretation of former symbols is far more efficient than the introduction of a lot of new symbols. Habits are better preserved in the case of a meaning shift leaving the same appearance than by violent eradication, which may give way to new competitors. When present knowledge recognises its debt to predecessors, its impact and diffusion are magnified.

The unbelievable conformity of new religion founders, really opens the way to a kind of productive hermeneutics proceeding through concentric interpretations in a finite universe of symbols, while revealing the aporetic relationship between infinite spirit and finite manhood. So, a man using a finite set of symbols to produce compulsive meaning is aware of the infiniteness opened by this activity in the field of action, and can admit that his finite body rightly supports an infinite becoming.

3° The "inspired superstition" of sacred place architects

It is often said that a sacred place has always involved a form of worship, that is, the place is given an "a priori" mysterious sign of holiness.

In this case, the architects of sacred places can appear as naïvely superstitious.

But finally, it is easy to see that the explanation could be reversed: the sacred character of a place is caused by the constant sacrificial actions of men. The re-use of sacred practices is very similar to strategically induced secular practices.

In fact, the ideal place for a new form of worship is the old sacred site. Only this option guarantees that the old cult is dead, while the live forces which support it are diverted.

So, worship places tend to remain the same, being preferred to sites devoid of the holy imprint. Secondarily, the material engram of the worship place, here the architecture of the temple, church or mosque, will provide materials, or even the architectural structure. Compromising elements, which are not easy to dissociate from the old religion, could be relegated to foundations. So, the substitution is no more the capture of a potentially explosive knowledge parcel, but the harnessing of vivifying water dedicated to increase universal knowledge.

It is interesting to note the coincidence between sacred and architectural reasons, as well as between the sacred character and its material substratum.

The superstition of sacred place architects was somewhat inspired.

4° Why laziness, conformity and superstition could not herald the Genius?

We have to persuade ourselves that only a complex of several understandability orders could explain the proper movement of a sacred place - any reduction to only one order significantly blurs our reading capability. Each sacred place requires a form of real hermeneutics for understanding its evolution, even if we accept that its destination remains obscure.

In particular, this point of view calls into question the very notion of *work of art*. In fact, many works of art cited here must be viewed as "authorless" works, because no artist may claim the creation of the work in its uniqueness.

If sacred places stir our heart, this is perhaps due to the prodigious tension between vanity and productivity in human belief. How can such a vain belief crystallise in the form of an authentic assertion? How can false ideas lead to such brilliant results?

Some specialists of semiotics claim that man is characterised by a compulsive practice of investing meaning into symbols. We believe that the characteristic of men is rather their capability to generate non-sense in order to cause the arrival of a transcendent meaning, to be verified and experienced, and always appearing as a leftover.

Each sacred place has perhaps the vocation to say only: meaning cannot be invoked. This is, undoubtedly, the mystery of meaning, consisting in the possibility of being disclosed, i.e. given as a leftover. Sacred places, when the effort paid to reveal a meaning crystallise, only succeed in opening new fields for symbol interpretation. The regeneration of symbol interpretation opens more and more this place, crossed by the flow of polysemy. Stones and artefacts get a patina which keeps imperceptible traces of successive uses.

In the same way, when a sacred place is razed to the ground and its evoking elements are scattered, the opening to creation and regeneration disappears, since the place's power is wrecked.

Meaning can only be revealed in singular instances. Its settlement can be neither prescribed, nor described. But the "Homo faber", who believes that any meaning is produced by a mysterious and necessary coincidence of random elements, is not satisfied. He intends to repeat this occurrence in order to master it. In fact, the sacred place is precisely that of the coincidence, invoked by the ritual and mastered by the repetition.

II) Knowledge acquisition method designers are all alike to cathedral builders

Knowledge acquisition is based on a rational principle assimilating the human subject in action to a rational agent [Newell82], following the oracle "tell me what you will, know and can and I tell you what to do".

Knowledge is viewed dualistically, as an extensible matter which can be hoarded. It can be modelled in an abstract and conceptual way (this is the stake of knowledge acquisition as "constructive modelling process"), but also can concretely rule over the decision and the initiation of action.

Concepts are considered as re-usable elements [Chandrasekaran86], like the stones of temples and cathedrals.

But concepts are also represented as symbols included in the interpretative diagrams called "inferential structures" [Davis80] or "semantic networks" [Brachman&al85] .

1° The "naïve belief" in the exterior character of situations

Let us consider a strange phenomenon which occurs to every one of us in a irreducible and urgent form. We want to designate the situations imposed upon us in the immediacy, in a way obviously experienced as "non prescriptible" [Castoriadis75] .

When we are confronted with such situations, irresistibly appealing to us, we feel that no explanation would be sufficient, no description of the case could exhaust what we experience. The prescriptive character of the settlement cannot be reduced.

We are obliged to notice the existence of singular situations invoking an actual thought of the situation, and which cannot be reduced to a conceptual description of this situation.

So, for instance, when Canguilhem relates the participation in the Resistance of Cavaillès during World War Two, and asserts that the resistant attitude was felt by the person concerned as self-evident, social, moral and objective injunctions, coming from an environment quick to put somebody on his guard and to recommend caution, were turned into a form of hypostasis.

Because any description is particular and appeals to categories: as soon as a recognition based on concepts is performed, conceptual forms filter out what is not shown, and what is shown loses its singularity.

Thus, why the conceptual representation of situations is spontaneously considered as essential, even if the manifestation of thought is reduced to a concept mobilisation? Why the concept is superstitiously established as a sacred place of the thought?

Like the sacred place, the conceptual model is intended to reassure and protect us against the thought and experience of a singular situation. Can all situations be adapted to such an automatic prescription? Obviously, never, because the conceptual tiling is an integral part of the situation, given in this case as a different and overloaded form, but always allowing the possibility of a singular interpretation.

So, as in the case of builders' superstition, the naïve belief in the concept's supremacy does not exempt us from experiencing the singularity of situations, but attenuates the trying character of the exposure. This belief proposes the notions of memory and history, and institutes our human contemporary as an alter ego able to experience the same situations as ourselves. This acts like a smoothing mechanism which prevents the dramatic fall of a man in a world where all situations are singular

But concepts, as soon as they are designated as the thought's centre (in fact, thought is renamed knowledge), keep their position by means of tautology: productive actions validate the present conceptual model, while unsuitable actions only prescribe its improvement. The supreme concept of "concept" can never be called into question.

2° The "vain confidence" of concept embedding

Concepts die hard, and tend to be used, even if the situation to be described and modelled must be reduced to conceptual conformity. A Spanish proverb says: "With a hammer in one's hand, all is like a nail". This means that things are salient proportionally to the pregnant character imposed upon them by our intentions (here, in the common sense) - a very hungry man in the street finds caterer's and baker's shop windows more salient than the publicity of the best shoemaker.

The truth of this proverb is even more obvious for concepts: when you have a concept at your disposal, you tend to use it for interpreting all singular situations and prescribing appropriate action. The case where the situation could prevail over the concept is ignored.

In other words, knowledge acquisition tends to assert that planning prevails over the disclosure of a singularity. Concepts are artificially kept alive, beyond the expiry date. The most dogmatic form of this assertion is fixed by the postulate of concept re-usability. Here is crystallised the renunciation of thought as ever given manifestation, for the benefit of knowledge, to be acquired for ever.

There is however a case where thought prevails on knowledge: this is the situation of crisis.

So, a crisis which is experienced indicates the definitive lateness of concept-based models, by invoking creative thought, when planning would preferably ignore the actuality. Wise planning and its rational basis stumble over the place of crisis, where an irreducible singularity is found, requiring the actor in situation to experience himself as irreducible to a rational agent.

When decision-aid systems are used in a critical situation, e.g. in the case of armed forces deployment on an external theatre of operations, in an area of strong geopolitical inflation, it is noticed that the organisations concerned tend to plan situation interpretations as interventions upon these situations [Rousseaux95]. When a person being on the terrain describes a situation experienced as critical, his symbolic production will be interpreted as an enriched and over-determined situation by an observer who believes that he experiences the same situation, perhaps in a simplified but more precise form.

The external crisis as a commonplace seems to present a fundamental danger, while instituted crises must present, by construction and vocation, characteristics completely opposed to those of crises which are experienced. This is similar to the case of a psychoanalyst who would believe that he is not subjected to melancholy because he treats persons suffering from this disease. To believe that one is master of his own crisis because he treats other people's crises is a very unfortunate confusion.

In this case also, our belief in concepts is limited by their incapacity to assume the irreducible singular character of a situation, inviting us to even more thinking. Eventually, the lazy assimilation of concepts to re-usable knowledge blocks invites us to re-think perpetually the artificial character of our conceptual elaboration.

3° The "deceitful assimilation" of concepts to symbols

Classic knowledge acquisition methods as e.g. KADS [Wielinga&al92] are based on reducing and naïve principles still belonging to conceptual thought. We have demonstrated why their controlled use, far from replacing situational thought, points to the imperative necessity of experiencing singular situations in order to understand what they are telling us.

It was often noticed that naïve ideas can give birth to productive results.

The strangest aspect resides however in the practice of iconic and synoptic representation of concepts, engaged by their names in interactive graphic relationships, to symbolise and denote dynamic thought.

Following the plans of the builder architects, with their metaphoric sketches, concept symbols (in most cases, a name) and theoretical relationships (often, a link between concepts) would explain to us (partly) the intimate life of concepts.

The computer specialist moves ritually his finger along this cabalistic entanglement of branches. The result is often due to aesthetic considerations: some forks lead to seven branches recalling the Revelation, the Word is in the beginning, and the root of all things is represented by a tetragram pointing beyond any sensible knowledge to designate the programs to be executed on Doomsday.

Let us consider a strictly hierarchical organisation in charge of planning and commanding actions on an external theatre of operations. During a commanded expedition, each participant lives and experiences situations which may be seen as singular situations of crisis (e.g. the international presence in Kosovo). He is able to inform his senior in rank on the interpretation of the situation, but cannot transmit the experience of the crisis, by definition always immediate: only a factual and descriptive mediation is possible.

So, interpretative concepts do not remain in the field of thought; on the contrary, they are projected onto a referential system of symbols to be made objective. Thought is thought as a tool.

Far from experiencing the original situation, the senior in rank who reads he reports or examines the maps and photos over-determined by symbols, before adding his own over-determining value and transmitting the results to the upper level, will surely participate in a decision-making group. But the situation he faces is not the same as that of the subordinate. The crisis our officer could experience is also different from the basic crisis.

Knowledge acquisition owns its priests and its books of revelation with particular rituals and symbols. Concepts play the role of both re-usable knowledge units and atomic symbols used by rituals incessantly repeated and re-interpreted. The acquisition of new concepts and conceptual combinations is carefully stored to constitute the thought's sanctuary.

4° Knowledge and computing

The naïve productivity of knowledge acquisition method designers is very similar to that of cathedral builders, based on a mixture of laziness, conformity and superstition.

Old notions: memory (conceptual configuration are fixed to define the paradigms of human behaviour), traceability (postulating that the pragmatic success of an idea validates it *per se*) and re-usability (thought is reduced to concept handling), are quite abundant.

The stake is however to be found elsewhere: it resides in the deep understanding of the radically novel character of automatic computing using abstract symbols.

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