Sense pedagogy through humanities recovered into real sciences

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ABSTRACT:

There is a fracture at the level of teaching – between the content of the courses and the meaning that the individual person extrapolates at personal level, and it is from this level of the individual sense that the intrinsic motivations which lead people to fulfillment start.

The sense distance is noted in the field of all areas when teaching focuses on information transfer within the respective subject matters, so that the bases of the theories taught are considered non-negotiable. In this context, the individual cannot be aligned and is basically bound to become a professional and social machine.

The solution proposed is to design a motivational seminar to synchronize students with the significant values and histories of each subject matter.

Keywords: personal fulfillment, intrinsic motivation, motivational seminar, cultural sense.

WITH SINCERITY ABOUT 1 + 1

The greatest difficulty in drafting this article was with its form, more precisely with the "requested" mould of an article that is expected to be "serious" enough for a scientific conference. The mould in question came from observation, questioning, hypothesis formulation, verification, and conclusions. Along this path imposed on any scientific study, we encountered the first divide between what we call the humanities and sciences. Theoretically, both follow the same pathway in view of imposing conclusions which are credible and acceptable within the academic environment.

However, there is a crossroads beyond which "human beings" separate from "exact sciences," and this separation comes precisely from the degree of precision, but above all the degree of generalization. Francis Bacon establishes the foundation of the hypothetic-deductive method in Novum Organon. From Bacon onwards, the "new method" has become the standard separating man's effort to know the world and himself between naive and positivist approaches. Positivism, as a verified data philosophy, is squeezed out of Locke's Empiricism. Moreover, it should be noted that the solid arguments of Skepticism cannot be taken for a warder who constantly reminds of the relativity of the truth revealed by man.

The formal languages in which the sciences are expressed appear to have "finally" escaped this spectrum of doubt. Axiomatic rules do not allow interpretable results. However, like the seven days
of Creation, these axioms are decisions, verdicts which escape critical thinking, forming an elite body with a status that is different from the rest of the subsequent productions. This "amendment" illustrates precisely the fissure in criticism or the creativity of science, one which could have been overcome in the history of science not only via revision through revolution, as demonstrated by the birth of non-Euclidean mathematicians or quantum physics. Sciences can only be refreshed by revolutions, by breaking taboos: Lobachevski against Euclid, Einstein against Newton. This is the paradigm in which they were built; it is exactly in from this point that both their power and their weakness results.

I was mentioning at the beginning of this article, the difficulty of writing it. The solution I found was honesty, lucidity, stepping back and appreciating things as they are. To clarify, thinking of Lobachevski, imagine for a moment a seven year old child who refuses to accept the lesson on $1 + 1 = 2$ and asks for these statements... Who would call the teacher for help? The mathematician or the philosopher?

I do not dispute that $e = mc^2$, but I cannot overlook the fact that students in engineering questioned why they attend subjects in the field without being given any valid psychological response, merely being offered pecuniary or formally invalid reasons. Trying to go beyond the extrinsic motivation of financial gain, when I advanced the hypothesis of having all the money in the world and asked 20-23 year old students if they would choose money over self-fulfilment, I did not receive any answer... This finding is just as legitimate as the speed of moving light in vacuum.

**A TIGER LURKING IN THE SHADOWS**

The thesis of this article is not that there is something to be corrected in the scientific method, but that there is a narrow difference between the objective and the subjective. Surely, man is not the centre of the universe, yet science is a human artefact and, as a result, it is important not so much for the way he tries to look at the world, but for how he builds the meaning of the discoveries he makes.

The human world is eminently phenomenological because the person who observes it is subjective, even when rigorous in recordings; he/she sets priorities, and the exclusively hermeneutical research unceasingly combines what is observable to penetrate the hidden essences. Sciences or applied disciplines are extensions of "How", whereas the humanities focus on the "Why". However, the fundamental question of any child is "Why", “How” follows “Why” in sciences with answers revealing necessities and causality, but the real substance of “Why” is searching for meaning, not cause or necessity.

The problem crystallizes when “Why” is understood as an incomplete question, which creates confusion. In the humanities, it is translated as “What is the meaning of…?” while in sciences, it practically means “What is the cause of…?”, only that the discovery will inevitably return to the question of “Why”.

Human curiosity is structural. There is a line of code that forces us not to take the darkness, because a tiger may hide in there. This curiosity exists and defines human nature as a principle, as an open direction, and manifests itself differently in various contexts, but in fact the same anticipation of danger, the instinct of self-preservation is the underlying reality. Thus, beyond curiosity, beyond the drive to observe and question (the moment of rotation of a particle as it were), pure curiosity, propensity without form may be wrongly inferred, forgetting that behind every question, man wants to know if a tiger is not lurking in the shadows.

Let us focus more on this tiger. What is he, what does he threaten, what can he take? And let us start from the old curiosity observation of the manifestation of the angular momentum: $L = rxp$, where $L$ represents the kinetic moment, $r$ the position vector of the body, and $p$ the impulse of the body. From here, we arrive at Bertrand's Theorem: "All the attractive central forces can produce circular orbits that are naturally closed". But before we reached this understanding, a child had probably been fascinated by a Spinning Toy. In front of that magic toy, the child had probably wondered about its meaning and his own, in a world in which there is something like that Spinning Toy.
In the hermetic logic of formal languages, $L = rxp$ is the victory of the spirit on nature, the first step in modelling the universe: the formalization of a natural law in a formula, the discovery and the success of the digitization of reality in a reality of the mind... just as, at the end of this fantastic process, the adult scholar forgets about the child amazed at the toy, and forgets to answer the question: "What is my meaning in a world where there is something like that?" – which is the actual danger that lurks in the shadows.

**BABILON**

What links us and divides us equally are Stereotypes. For Jean Baudrillard, the last stage in the loss of the link between the world and its signs is a "Pure Simulation", in which there is a connection among signs, but no connection between signs and reality. His hyper-sign, this sign of another sign, is the constitutive brick of Hyper-Reality, that is, of a fictional reality that man believes to be more real than the actual one.

The Hyper-Real world is coherent because it is a system of Stereotypes. Stereotypes are elements that provide the information redundancy required for any communication; "but", because there is a "but," it has a perverse effect: reality, when merely understood as representation, as iconic symbol in its simplified, ergonomic form, is only accessible if arbitrarily consensual or agreed upon.

As unintelligible as it may seem, The Stereotype has a quantum backing. In terms of evolutionary genetics, The Stereotype would be called Canalization, that is, the positivist version of Ockham 's razor, in which evolution is not a computational process but a path imposed by a dominant force, as Richard Dawkins, for example, suggests in *The Selfish Gene*: “The Low of Stability Preservation". This "Stable Structure" was claimed to be the application of the principle of universal entropy, and so we conclude the plea for the quantum background of The Stereotype.

As mentioned previously, Hyper-Reality is coherent because stereotypes do not work solitarily, but as elements of an articulated system. In the language of Communication Sciences, this is called Culture. As a result, when a stereotype fails, that is, when it is "de-conspired", and the limits of the representation of reality are revealed, people ignore it knowingly just as one might read a text in a foreign language, skipping the word that one does not understand, leaving the context fill in the gap..

In fact, this error, the dysfunctional stereotype, is the sign of the whole system's error. For the sake of intent, however, no one sacrifices the whole because of a single error, and thus the alienation of language rolls over. The big impediment of the correct appreciation of the sense consistency of a situation is the "appearance of the sense". "Articulated Forms" give the impression of "Articulated Insight". As a result, articulation suspends critical thinking, the correct appreciation of something as a "failure".

However, what explains this "tolerance", this overlooking of error? The human mind "accepts" itself in terms of approximation, that is, it acts by approximating everything because it is more efficient this way. The value of any sign or code is dictated by several elements, within various contexts:

The context of the Dictionary is the degree of appreciation of the measure in which each element defines a reality represented in absolute terms (without taking into account other realities). The Encyclopedia context is the stereotypical horizon. One personalizes the appreciation according to the degree of collective use, that is, to how much an interlocutor is obliged to interfere with the denotation so as to understand a message. And finally, the Syntagmatic Context, which evaluates the approximation in a specialized text. Contextual Syntax is basically an ad-hoc code within the general code, a customization in a text for which the "approximation framework" is very precisely defined. For example, a fairy tale translates into the code of the miraculous, of fantasy and parable, though the words used are the same with those which appear in a colloquial discussion or academic text with a completely different meaning.

The loss of the sense of the individual is equivalent with being "lost in translation". Someone may know the lexicon more or less, without knowing the code. The difference between "knowing" and
"understanding" a text is the difference between being able to translate each word separately and being able to articulate shorter phrases or complete sentences.

STORIES TO WAKE UP ENGINEERS

“Engineers turn dreams into reality.”
Hayao Myazaki – The Wind Rises

It is true that engineers turn their dreams into reality, but they do not take one for the other. By avoiding this confusion between Reality and Hyper-Reality, real engineering work is born. It does not demand a wizard’s mind but that of a particular kind of person, who covers exactly that ineffable space between abstract science and everyday needs.

Escaping hyper-reality simply occurs when one announces one is around it. How is this done? By delivering lectures which not only present the formula, but tell its story also. Thus, students will not be called upon to learn that the hypotenuse of the square is equal to the sum of its cathetutes, but will be invited to divide an irregular piece of land in the possession of the pharaohs and see that the hypotenuse of the square is equal to the sum of its cathetutes. Of course, the teacher finds this inefficient and redundant teaching method simple and obvious, but as everyone seems to think the same way, students are no longer explained the bases of reality that these abstract formulas are drawn from. And so, unimpressed, students get to college only to hire engineers for a salary.

The question is: Where are the engineers who want to change the world? To cross it in giant transoceanic ships, fly to the Moon, or like a bird with shingle wings? The researcher who discovers a cause of nature, forgetting that the end of his study is man, loses his meaning. More serious, however, is that this sense is denied to the student, who ends up without a sense of personal fulfilment. And then, what are schools good for if they do not help us find ourselves and our purpose?

CONCLUSIONS

(1) The axioms of science are cultural acts, propositions and approximations made in an attempt to understand the universe.
(2) How does not answer the question Why, in the circumstances in which How is only useful if it elucidates the meaning of why one wants to know Why.
(3) Hyper-reality is not Reality.

By assembling the arguments and evidence put forward, we conclude that engineers are not only made of formulas given by and exams taken with demanding teachers, but also of the possibility of meeting remarkable models.

Increasing the intrinsic motivation and the mindset of a valuable engineer can be achieved by designing a lecture/seminar which motivates and appeals to affective memory, which emphasises the role of the main precursors of the subject matter in the culture of humanity: Wheel Inventor, Archimedes, Leonardo da Vinci, Johannes Gutenberg, Galileo Galilei, James Watt, Isambard Kingdom Brunel, Gustave Eiffel, Nikolaus Otto, James Clerk Maxell, Karl Benz, Alexander Graham Bell, Nikola Tesla, Henry Ford, Guglielmo Marconi, Elon Musk ...

Individual meaning is born by connecting to the meaning of the world, and the meaning of the world is created through significant narratives. The individual is, in a sense, correlated with the meaning of humanity; his role in this collective construct will eventually lead to students who attend a class or another primarily for self-fulfilment, understood as an element synchronized with the paradigms and the sense of Civilization.
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