

## Searching for Coherences and Anomalies

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Received: 04 October 2019

Published: 21 November 2019

**Keywords:** *Coherence; Anomaly; Mega Data*

There is a narrow band where we can see, hear... think....

Through millions of years of what we call evolution we've specialized sensors that allow us to detect signals (stimuli) that let us "feel" the context in which we stand and ourselves, creating balances (some of the possible ones), establishing dialectics, finding viable environments (and eliminating the unviable ones), ecological pictures (possibly chlorophyll green, but also many others), finding coherences.

Coherences that result from a process and are not something of a sacred and venerable imaginary that must be maintained at all costs because they are untouchable.

We therefore have:

- A coherence in the set of sensors we've developed;
- A coherence in the range of signals we can detect;
- A coherence in the form (strategy) of how we coordinate all these signals;
- A coherence in the strategies and forms of operationalization that we have developed and acted upon;

- A coherence in the way we relate to the context in which we are in and to which we belong, either to the outside or to the interior of ourselves (where it turns out to be an organic being and an organic balance);
- A coherence that we were selecting and improving as we grew (quantity / size). While we were developing (quality) and while we were specializing.

Many other coherences exist. To all this we call nature (see what we were told about this entity by Bertrand Russell: “Man is a part of nature, not something that contrasts with it.”)

The reason for being of science is therefore to look for anomalies in the way we interpret these coherences and, when necessary, to find ways of understanding these coherences more efficiently in relation to the objectives pursued.

This was the way (among many more) that lead us to where we are today, the world in which we live, through a dialectic of phenomena of which we know only a small part (either phenomena, dialectics and their consequences).

After a few millennia that we (Man) have considered ourselves unique and special (both in origin, in the strategies, and even in the operations used), it's not easy to humbly accept the tiny role we have played and we have, if we consider the scope of this planet Earth and even more if we think of the whole universe (leaving the multiverse to other discussions).

It is useful to be aware of the process in which we are integrated, what is happening, and try to understand and explain what is happening, because this whole picture, which we often forget, certainly influences the forms of operationalization we use nowadays, in the strategies that we set up and in the dialectics that we establish, either in the definition of interventions that we can or should not establish, or even in the capacities with which we can act.

It is within this general framework that we insert the identification of a phenomenon that has been expanding in an explosive way a few dozens of years ago - the wide exponential of the range that we can access through the sensors we have and the information we are able thereby acquiring.

The instruments, the methodologies, the capacity to understand... that for thousands of years Man has been discovering and developing (from stone tools, interplanetary rockets, science, social structures, etc., encompassing hardware and software, theorizations and praxis), tools created with zeal and preserved and handed down from generation to generation with the care of those who deal with real treasures, which, however abruptly (in a few dozens of years) have multiplied brutally. We face new problems, perhaps even more serious ones.

Needs where replaced by abundance - which does not mean that everything is positive and represents an advantage (Note: see, for example, how solving the problem of lack of food has given rise to another calamity: obesity - two forms of imbalance).

It is necessary to find new coherences, both general and local.

## Individualization, Mega Data and Powerful Sensors

Accustomed to a world of superficialities, made indifferent by a world of abundance that fell on our lap, often without much to do, formed in a school that led us to memorize and reproduce knowledge (subjects) that often translate outdated frameworks, without the need to search for the contents because they are abundant and available, without having to select or perform a critical function and without the need to deepen and consolidate because assessments focus on the ability to reproduce subjects (factors that demonstrate how the pedagogical process and institutions of education are outdated), we have faced the challenge of, since babies, “having more toys than we could wish for and not knowing what to do with them”.

Enormous imbalances, both in individuals and in societies, were thus created.

We confuse culture (which in the framework in which we live is the capacity to relate) with erudition (vastness of knowledge, quantity, therefore), shuffling information with wisdom. Having in the fingertips, in the simplest mobile phone, the possibility of erudition (tons of information), it is no longer valued and interesting. In a world where possibilities are endless, we end up losing a sense of purpose, just like predators chasing a herd, but failing to focus on a prey let all the food they seek escape.

We roughly define the general picture in which we live.

We now turn our attention to some local levels that interest us, with particular and specific aspects. We will see that once identified and specified some of their own distinct problems, the answers they require are similar or even broadly, for what we are aiming for is a global coherence in which individuals and societies seek new congruence to the resulting framework of change, a framework that, whatever the aspect treated, focuses on the same Man as author and actor.

### The Problem

**In Health** - a set of sensors capable of detecting many variables, of processing the collected data and launching different alerts are nowadays available at reasonable costs. They can even transmit them in real time to a registration center that can do a deeper treatment of these data and diagnose / prescribe using the cumulative database on the individual concerned.

The laboratory, archival and processing facilities thus made available exceed what until very recently had existed in the best equipped hospitals. The ability to warn and trigger appropriate responses to any existing anomaly has trivialized (even when we have a car accident).

Of course, this dynamic picture is not compatible with the ways of acting proper when the support media were dispersed by multiple centers and the results that were being obtained (at time scales sometimes long and possibly out of phase between incidents and others, since the individual is a dynamic entity in permanent transformation) were led “in hand and paper” to a decision center.

The reference used is no longer “normality” (the average values considered normal - a relatively rigid frame) but the variability in relation to the evolution of the individual process and the anomalies that occur.

**In Sport** - two complementary tables are now available: 1) the characterization of the individual and his / her needs in relation to the problem of the sports performance that will seek to optimize (generically a diagnosis); 2) the prescription of the means to use in order to implement the different variables to treat in training in an integrated way and in the dialectic of processes - for example, It is a little “coarse” to separate “physical training”, “technical training”, “strategic training”, “psychological training”, etc..

Although we can identify the existence of situations in which it is justified to treat some particular aspects in an isolated way (a specific work that we say - “in the gym”), as we aim the development of Man in integrated situations training can be seen in a global way but personalized in relation to each one of the sportsmen we train, simultaneously integrating the factors that we control of all the aspects that must be treated in a specific way. We can treat and guide each individual in a particular way (the ridicule of a high competition team doing a “all 30 pushups” at the same time - a situation that could no longer be justified in a bodybuilding exercise but in a group spirit) taking into account not only individual needs but also the cost of every hour, or minute, of a high-level sportsman’s training.

The available and reasonably priced sensors allow to treat individual’s different aspects in an integrated way. We give a trivial example: the set 1) muscular work / 2) energy consumption / 3) decision making, changes when we modify only one of these variables.

Since it is not easy to reproduce the conditions experienced in a competition and the training is the preparation of the individual for a global situation, we often see (too much often) individuals considered to be highly trained (and with compatible, financial and other benefits) to fail in ridiculous conditions (for example in a penalty shoot-out in football when they are not even close to the goal) because they are in a situation of stress.

But here in Sport we must consider two types of problems:

- The processes are still highly subjugated by empirical dominants in which there is not even an understanding of the issues that are being addressed (a structural problem);
- The existing theoretical framework, with a scientific basis and models that allow the understanding of the phenomena in a way already quite accurate, is still very muffled by disciplinary views incapable of translating into coherent and efficient praxis. This is further exacerbated by the fact that the models of the different sports that identify the dominant variables and their equilibria and coherence (again the weight of empiricism and the weight of the champion advertised as capable of playing a sport, but unable to understand and explain it - even in the particularities of the performance itself).

**In Education** - today resources are available to support the pedagogical process, and at reasonable costs, which go far beyond computer gadgets and well-choreographed presentations, but empty of the transforming “active principles” of students.

Even more serious, sometimes teachers still “believe” that educating is transmitting knowledge, entering into competition (where they have no chance of being competitive) with computers or the simple mobile phones

that can fetch “all the information in the world” and with presentations that even the most inspired teacher cannot perform.

Let's face the following situations:

1. The formation of the individual, whether through the educational process or through other forms of parallel formation, is not done by merely overlapping layers (of experiences, knowledge, mastery methodologies and processes, etc.) in a process, merely, cumulative (arguing that the more layers the better), but, because Man is an organic being, in which each of his organs relates to others in strategies that articulate dialectic, in which a dialogue of reactions happen and seek efficient equilibria, education (such as development in sport and the state of equilibrium that health seeks) is a process of transformation (formation let's not forget) of the individual;

2. The formation of the individual is achieved in a more efficient way (from what happens in a so often random way, through cumulative processes as described above), or by the mere occurrence of situations without a duly programmed and intentional educational objective, even though in these situations some things can happen.

The education / formation of the individual through what we will call a reactive process, instead, or beyond, the availability of knowledge / information, the individual is faced with appropriate stimuli that cause him to react, to seek to adapt, to transform. This triggers the sequence of stimulus » reaction » adaptation » transformation » evolution. Using the terminology vulgarized in health we say that we start from a diagnosis, we make a prescription, and more than provide some elements that the individual may need (which often will not even have the capacity to absorb) and act on it (such as with a vaccine) leading him to have an aggressor identification and antibody production reaction to eliminate it. The identification of the aggressor (of the problem, in education and in sport) is a very important factor because it prepares the individual to react in future aggressions.

## **A Change of Strategy - Standardization Versus Individualization**

As we saw at the beginning of this work, change is not a matter of fashion nor a modification that is carried out by mere will to change.

Change is driven by structural needs, for we must not forget that global coherences requires that strategies, technologies, operations and the tools and instruments used constitute a whole which, if not balanced and properly harmonized, cannot be efficient or even does not work. See how a simple screw can prevent a complex machine like a car from working.

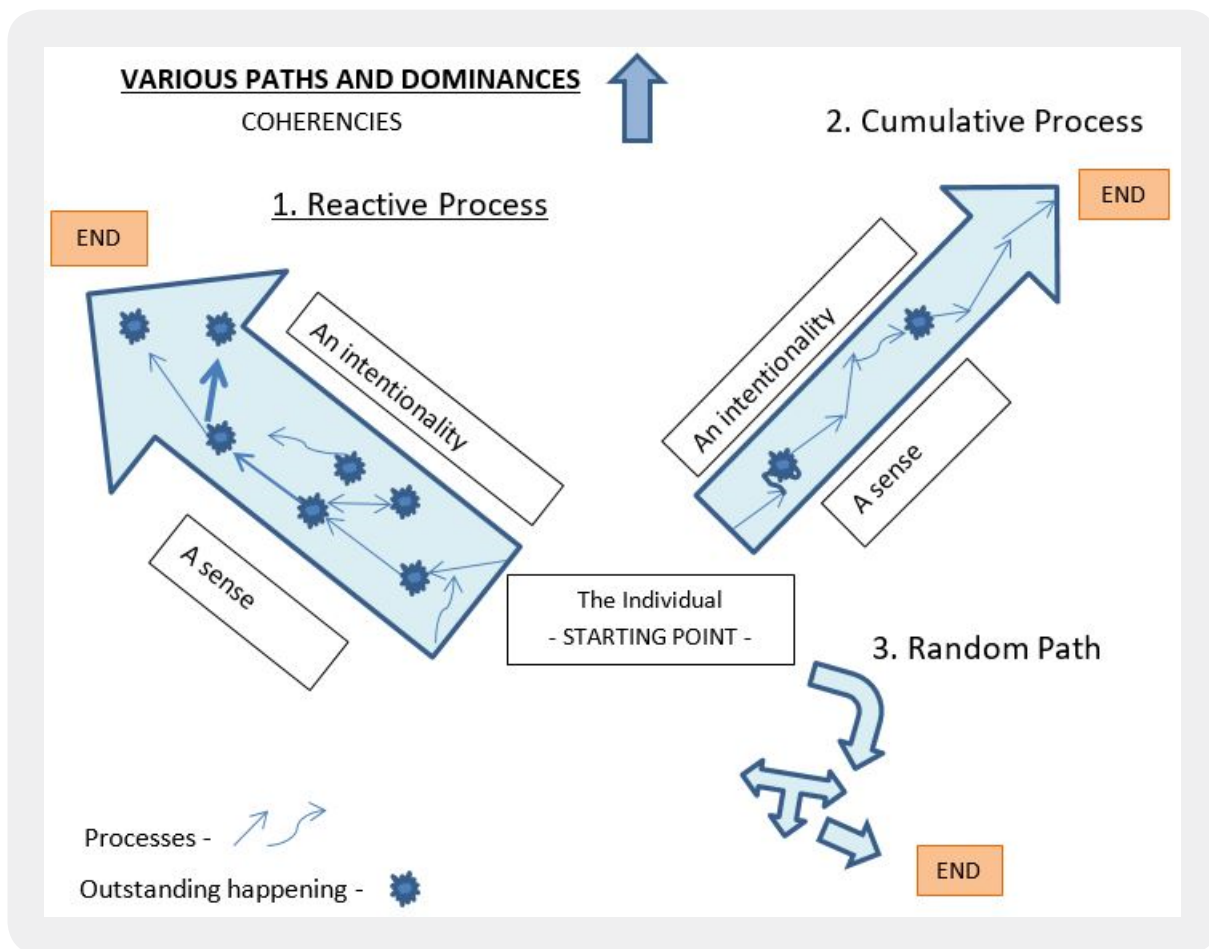
When we think of Man from the operative point of view and not by mere incidents or “faits divers”, we have a functionality that always runs under the same principles and precepts - generically - stimulus » reaction » adaptation » transformation » evolution.

In the end the agent, the author and actor, is the same Man, who does not react in a way here and otherwise there. Certainly, the individual is not an isolated being, the dialectics that he establishes with a context may

different from the dialectics he establishes with another context - what we affirm is the basis of the relation, Man, respects the same principles and laws of functioning in the different connections established.

Although starting from the same point, the person, an individual, the strategy followed can lead to different paths, coming to different points and not forgetting it, passing through different advantages and disadvantages (for different lives - here the route can even be the most important).

Let us, in a schematic way, show the operations that can be built nowadays in frameworks such as Health, Sport, Education, confronting some possibilities and alternatives. The pedagogical process should prepare the individual for the variety of options offered these days (as opposed to pathways, in health, sport, education, etc., pursued in other contexts or in a standardized context) by exploring new coherencies.



- The path counts not by time or distance but by the pleasure gained - in sport and education by pleasure gained, in health for non-lost of pleasure and pain not felt;

- A good choice of outstanding happenings, the systematization of processes, the liberation of the need to fulfill many of the repetitive functions, the opening of perspectives and vision in the problems dealt with,



the need to exercise a critical and reorienting sense are some of the possibilities (obligatory) of a reactive process and of the contexts thus developed;

- Wealth (which is not only variety but which is also made of objective and efficient choices) of the way allows the fortune of a life.

**Three Possibilities of Coherence:** three examples among many other possibilities in the lives of individuals or societies.

1. **Reactive Process:** Freed from the burden of “normal” (eg thanks to technology, automation, artificial intelligence, etc.) outstanding happenings must be managed (☀) in which capital gains (pleasure, financial, experiential, innovation, etc.) are higher. Boost the risk / yield - so it is possible to cover a wider space / alternatives.

2. **Cumulative Process:** Man has not yet freed from routines and profitability is predominantly made by specialization / standardization. The outstanding happenings should be mitigated and managed with parsimony. Privilege “cruise speed”.

3. **Random Process:** Events occur (and may even be very locally controlled) in an anarchic and random way. There is, however, no overall vision and an global strategy (of the individual, of society or both).

It is not easy to live in multiple frames at the same time. Jump from one to another and make the necessary adaptations.

We feel it when we use different kinds of computer programs, when we drive different types of cars, or we crewed different airplane models, when we have to change the pace of life several times a day, when we move from one language to another (and worse when we have to interject the use of several languages), when we have to change the pace of the past in a game or race (see Fernando, C., Prudente, J., Lopes, H., & Vicente, A. (2018). Does Decision Making Affect Heart Rate in Trails? Heart Rate Response to Treadmill Walk with and without Adaptation. *American International Journal of Contemporary Research*. 8(1). 24-28.),... until when after jumping on a trampoline for a few minutes we move to a hard floor.

Routines are strategies to save on the use of adaptation factors. Bureaucratization is the employment of “regular rules and procedures” to increase profitability (increase production or reduce costs) of an office. One of the benefits of the assembly chain to increase production is the normalization (the specialization and the repetition) of processes, the creation of a constant cadence (leakage to changes and permanent adaptations). The existence of a “cruising speed” even in the machines is advantageous because it consumes less fuel and saves the machine. And similar examples have no end.

It may seem contradictory to what we stated above: “*This triggers the sequence of stimulus » reaction » adaptation » transformation » evolution.*”.

We also defend the promotion of the existence of outstanding happenings (☀), in order to have a reactive process as a way of enriching the educational and sportive processes. And even in health “...and act on it (such

*as with a vaccine) leading him to have an aggressor identification and antibody production reaction to eliminate it...".*

But after all, will the reader ask, are changes and adaptation phenomena implemented or not?

It depends. Of the situation and the objectives pursued. We've assumed "...creating balances (some of the possible ones), establishing dialectics, finding viable environments (and eliminating the unviable ones), ecological pictures (possibly chlorophyll green, but also many others), finding coherences."

Man is a rational being (and will not be the only one). What is wanted, in the present conditions, is that this Man does not have to confine himself to prefabricated responses in which he is not competitive in relation to the multiple automations (and we are not talking about artificial intelligence and robotization) existing and available, is that it is open and able to find efficient coherencies. To exercise a capacity for: 1- conscious choice, 2 - perceiving situations, 3 - evaluating responses and 4 - triggering strategies.

To learn and train, for the exercise of these capacities, must be faced with stimuli (as many as possible) that bring adaptations » transformations » evolutions. The function of Man, the human condition, can therefore be more and more dedicated nowadays to the exercise of critical sense, realization of conscious choices, the exercise of creativity, being productive, innovative and fruitful. And less and less being repetitive, reproducer and imitator of situations, ceasing to be a copier that is nothing more than a "hand-force" to become a "head-force".

But if we want to increase productivity, we must focus, concentrate, all the capacities of realization in the work and in the objectives (in education, sport, health, etc.), removing all the factors which may create obstacles or difficulties so that the outcome can be so cost-effective as possible (reducing unnecessary costs to promote the desired results).

We seek coherences. Responses are not standardized (we leave them to automatons) but are constructed according to the intended objectives and circumstances. We emphasize the importance of understanding the functionality of processes to intervene in an intentional and objective way.