



# Sport as a Mean of Solicitation, Transformation, Evolution and Education of Man



Almada F<sup>1\*</sup>, Fernando C<sup>2</sup>, Lopes H<sup>2</sup> and Vicente A<sup>3</sup>

<sup>1</sup>Retired University Professor / Independent Researcher, Portugal

<sup>2</sup>University of Madeira, Portugal

<sup>3</sup>University of Beira Interior, Portugal

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**\*Corresponding author:** Almada F, Retired University Professor / Independent Researcher, Portugal

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## Introduction

We live in times of great change. Changes that are not only quantitative but also qualitative. Structural changes, therefore, deep and at fundamental levels, but perhaps less spectacular than some less familiar with the evolution of knowledge and science can imagine and even, naively, desire. Galileo's statement, when he was having the same fate as Giovanni Bruno of which he fortunately escaped, but which he apparently murmured 'for his own sake' "... and yet It moves ..." (ie "e pur si muove!" which, as we all think, referred to the Earth), shows that the conflict between the thought that in an efficient way seeks to add or correct, at the cost of certainties, is certainly very old but far from end. Thomas Kuhn in "The Structure of Scientific Revolutions" shows us how change is done in a difficult and conflicting way. And yet, despite the difficulties and oppositions (even wars), we believe that it is time to change. We have been publishing standing up for this change, particularly and most recently in papers like "Operationalization of the 'Human Body Domain': A Structural and Functional Conception" or "Winning Efficiency", or even "Compreender, Explicar e Gerir o Desporto" (English version: "Understanding, Explaining and Managing Sport") [1].

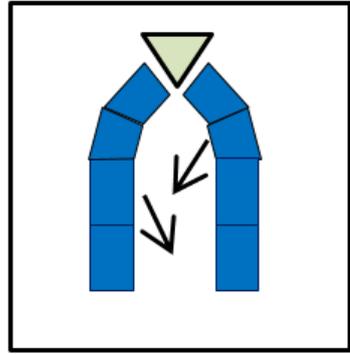
We have been trying to contribute to answer very simple questions that sometimes seem ignored: How does Man transform? Why does It change? What is the role of sport in this transformation? Change, also in sport (by the imaginary it builds, by the emotions it arouses, or the investments (also financial) it involves) is no longer peaceful. Many continue to insist on changing something (at the taste of modern technological fashions) so that everything stays the same. But sport, which can serve everything, is, as we have already mentioned [2], a mean,

a tool that transforms / educates Man. Transformations that are not given by magic tricks but that are the result of a process, a cycle composed of stimulus, reaction, adaptation, transformation. A human evolutionary process of millions of years with an organic concern for economy [3], that must be known, as well as the phenomenon that can stimulate it (the stimulus produced by sports performance), understand how to manipulate the processes so that the desired transformations can happen more efficiently. This is an essential change to understand, explain and manage sport so that better structured knowledge can be used to improve efficiency and improve the quality of the work produced [4].

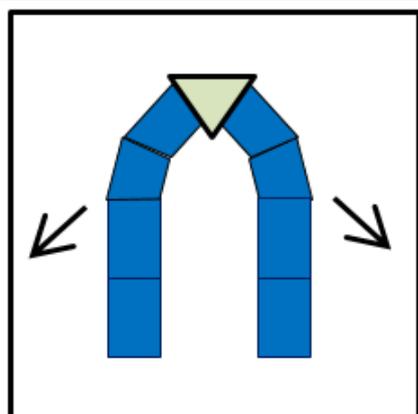
This is a change justified by:

- The knowledge that involves Man (although not only) has an excessively 'theological / magical' aspect (rest of the fixism, certainly, but that show incapacities no longer acceptable in the scope of today's science), that lead to expect results based on empirically tested correlations, but with functionalities that are beyond what we are able to conceptualize in functional models (models that would allow us to evolve faster, safer and with lower costs not only financially but, which is very important when dealing with Man, also in the efficiencies obtained and in the incomes that are achieved);
- The instrumental and equipment capabilities used in areas of intervention and theorization mentioned in the previous point have enormous capacities that are underutilized due to lack of capacities, both at the conceptual and methodological level, because there is a lack of conceptual tools (Figures 1-4).

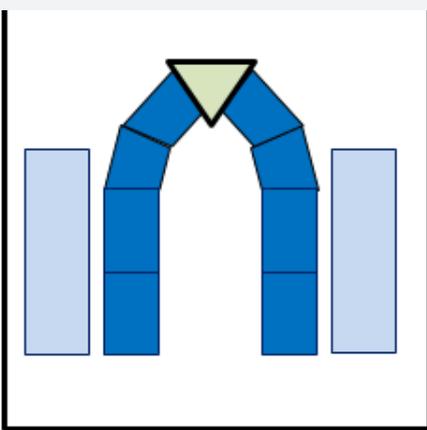
Alerted by the reviewers, which we appreciate, we think that these points justify a deepening, that we will do in boxes: A graphic example to facilitate the visualization of the structure; and for clarification of the reference framework used.



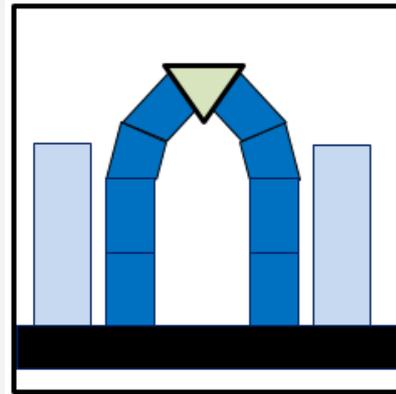
**Figure 1:** Without the closing stone the entire structure falls inside.



**Figure 2:** With the closing stone the entire structure falls outside.



**Figure 3:** With the side support walls the bow remains but needs the ground as support.



**Figure 4:** Finally, with all the necessary components the overall balance (of this set – and others that exist) is achieved.

**Using the stone / information analogy we have**

- a) The ground that supports the entire structure is like the culture or framework that holds the whole. Even when we are not conscious of it (and yet Venice sinks);
- b) There are factors that are not directly integrated into the phenomenon (lateral supports such as experiences, sensitivities of those dealing with phenomena) are fundamental for this and for how it can happen. However, when we focus too much on understanding the events that constitute the phenomenon (often through analysis) we lose sight of the whole and forget them;
- c) As the closing stone is the functional coherence that gives cohesion to the whole knowledge / information. Not all components of a phenomenon have identical weights in defining their characteristics and dynamics. Keystone such as “striking events” in people’s lives redirect forces restructure processes, alter natures;
- d) Without the set articulation we can have a lot of stones, but we will not have a bow. An overall view is essential for consistency, especially in a world such as today where information and knowledge are within reach of a computer click.

An arch is not an accumulation of stones, but a dynamic in which the stones (information) fulfill a function in the set giving a functionality by the interaction of the different elements.

Knowledge and science are fundamental in the lives of individuals and societies. But they cannot be treated carelessly (by defect or by excess).

**Reference Framework**

One of the greatest riches in the nowadays world is the diversity of (grounded) opinions and positions. In this way,

we have a multiplicity of paradigms (so much more than occasional divergences) that coexist and can counteract and combat, promoting efficiency and safety. Lost (in most cases) the constraints that made some authors to only allow the publication of their key works after their death, benefiting from the quantity (and quality) of those who are now engaged to science, as well as the resources invested and the openness that frees the plurality of positions, we live a unique situation in the history of humanity. But this conflict of ideas is not easy. "In other times" such would be impossible - we have left in this sense a reference quoting above Giordano Bruno. Unfortunately, the examples are, tragically, many. Acceptance of the other, person or idea, implies maturity and security. Conditions that are most easily found at the beginning and at the end of careers. At first thanks to a "healthy boldness" (which sometimes exists), and in the end by the humility that the hardness of experience sometimes gives.

So, because we do not want to stay in the closed debate in our "paradigm", we can only thank when we are alerted to the need to explain reasons and declarations made. It is not always easy to identify the difficulties of "the other". Even in the restricted space of an article (scarce in the number of sheets available, but especially in the short time of the reader). Unfortunately, the dialogue with the readers, being already technically possible, is not sufficiently implemented in this kind of articles and we are "on this side" to try to talk. Trying to answer to all these difficult balances. Through the presentation of "A Graphic Example", we've tried to show, in a brief and succinct way, the existence of different functionalities for knowledge / information, its complementarity and the importance of not losing a global perspective, since the different local aspects, even when they have to be dissociated in a more detailed way (in particular through analyzes) are always influenced by the whole to which they belong and integrate. Karl Popper in "Conjectures and Refutation" almost a century ago, we pointed out - almost a century ago - presents suggestions to obviate these difficulties. Suggestions that are still ignored in many areas of knowledge that continue to accumulate databases hoping that they will one day reveal them "the truth". An example of expected "results based on empirically tested correlations, but with functionalities that are beyond what we are able to conceptualize in functional models".

Regarding "that lead to expect results based on empirically tested correlations" see Ian Hacking - in "Representing and Intervening", Cambridge University Press: Cambridge 1983.

a) "Positivists are anti-realists about both theories and entities. Only propositions whose truth can be established by observation are to be believed. Positivists are dubious about such concepts as causation and explanation. They hold that theories are instruments for predicting phenomena and for organizing our thoughts..."

b) "Philosophers of science constantly discuss theories and representation of reality, but say almost nothing about experiment, technology, or the use of knowledge to alter the

world. This is odd, because 'experimental method' used to be just another name for scientific method...". Thomas Kuhn reminds us in "The Structure of Scientific Revolutions" to the difficulties of finding equilibria when "...if two people genuinely disagree about great issues, they would not find enough common ground to dispute specifics one by one" ... "after the paradigm shift, members of the new disciplinary matrix live in a different world from their predecessors". These are some of the many examples that can easily be found at a theoretical and conceptual level. Moving to situations (apparently) (the arch, see Box 1, is no more concrete than the ground, or "supporting sidewalls", but may look like when we think of arches) more concrete, in any area of knowledge that treats mMn as part of the phenomenon studied, and all deal with it (see Einstein when he tells us about the triple relation phenomenon / signal / observer), since at least the signal and the observer depend on human aspects.

The phenomena we focus most on, in the fields of sports, health, education (in the same way as in sociology, art, politics, etc.) need interpretive models and operational models to be able to not only be daily guided but also so that the mistakes made can leave the lessons learned for corrections as soon as possible and for future memory. The understanding and management operationalization of phenomena are dependent not only on the existing capacities, but also on an evolutionary process that should be efficient and with the possible security.

Data banks and information repositories are constantly growing, and which access is increasingly (and fortunately) easier through, mainly, progressively powerful and cost-effective bigdata and computing tools.

But if they are not framed, they may not fulfill the intentions that aim its exploitation / efficient use. The example of attention taken in the use of gadgets by the general population, but also by many scientists trained for objectivity and intentionality, come, we believe, as it happens in biological space that gave an excess of obese, if the strategies of the consumer cannot adapt to the available wealth (and especially in the case of knowledge / information).

A conceptual framework - information, knowledge - is not just a cumulative process. To conceive that information (and the way it is going to be integrated into the memory of the recipient) is a simple process of disposal of "drawers" in the nervous system, is not only coarse but also deceptive and can lead to false conclusions. Dialectics and the reactions that are established between the different components of the information to which each of us has access can cause a single component to change the whole (the whole is not the simple overlapping of the parts). We conclude that complexity is not always to be explored in depth. According to the available means and resources, all of us, permanently, set up operational frameworks that allow us to deal with the issues as efficiently as possible (according to the means and resources available). As we did in writing this article, we added this box by

increasing the content and the space used, thus seeking to present and defend, as we said above, an increase in the content of the sport conception and the strategies to use sport as an action tool. In this way, because knowledge is not a merely cumulative process, it was not enough for us to add some more data or some other information. We had to manage the interactions and the dialectics that we aimed to expose.

### This Despite

a) More than a century and a half of Darwinism with several proposals made by many neo-Darwinisms and the intervention capacities that came from simple observation to genetics and all the capacity for analytical deepening that laboratory skills today authorize

b) Man fulfilling, simultaneously, a function of study object and observer, an observer who is never neutral but who is committed to this double function, which is more than the contradictions that he finds in his cultural fantasies and nightmares.

### Conceptual tools of intervention and its structure regarding operationalization

All the processes of transformation of Man, whether at a pedagogical level, health, leisure, training, correction of pathological or functional imbalance, etc. (in the multiplicity of fields in which sport appears or intervenes, as we can see in the Focused Areas for Publication of the SciFed Journal of Sports Medicine) obey to functionalities that we can synthesize with the following functional logic. A functional logic that underlies and guides the transformations that take place not only in Man, but in all living beings, and which can be summarized as follows:

When subjected to any aggression within the limits (inferiors and superiors) to which it is capable of reacting (beyond them it does not survive or at least injures happen), every living being reacts seeking to adapt in order to reduce the aggression effects and increase their chances of survival; Processes such as training, treatment, instruction, education, etc. are within this functional logic. This is true in all aspects of Man's functionality and in whatever area of knowledge regarding different phenomena that lead to the understanding and explanation of Man's functionalities. These adaptations can be merely punctual and transient or determine transformations that will tend to remain beyond the direct effect of the aggression, defining modifications that may be generalized in the individual or in the group in the most diverse ways. The solution seems simple or even basic, but we believe that it can be fundamental so that a rupture can be made in the conception, orientation and management of sport activities, or even, being somewhat ambitious, with the understanding and explanation of the phenomena related to the Man and Its transformations (which naturally includes all Man's activities and the underlying intentions).

In a neo-Darwinian perspective, not only harassment and natural selection functioned in their evolution, but there was also an objective search for purposes that 'seeks' transformations that complement the effects of chance in the 'construction' of the advantageous mutations.

### Operationalization facilitating tools - a systematization obtained with some principles

The definition of 'principles' gives us guidelines of action that allows generalization in an organized way as we present, explain and exemplify in the most diverse areas of sports knowledge in the "Tratado sobre o Desporto" (English version: "Treaty on Sport"). Considering (explaining) the sports phenomenon as a process of adaptation that leads to transformations that may be transient or structural, allows us to surround its functionality and define lines of force that can be circumscribed in what we can call, namely:

- a) Principle of Economy;
- b) Principle of Availability;
- c) Principle of Global Coherence.

### Principles that will be authenticated (or not) if they are filtered through refutation

Going a little further on this note we define:

a) Principle of Economy: adaptations that are not activated for some time (defined in specific scopes) are retracted so that maintenance costs can be avoided.

Example: muscle is an obvious example ("if you don't use it you'll lose it"), but can be extended to all functional organs and processes such as psychological phenomena, etc.

b) Principle of Availability: when there are potentialities (consider the limits of adaptability that can and should be identified and defined) and these potentialities are demanded by the response to an aggression (lato sensu - which may even be the search for solving a problem or overcoming a difficulty), adaptation processes will be triggered to generate new capacities, rebalancing the metabolic process and consequently redefining the limits of adaptability, in a transformative process that goes much further certainly than 'chance'.

Example: muscle can be a good example again if we consider not only its individual development but the whole process of readjustment that goes from the physiological phenomena that we can call of support, the adaptations of the mental strategies and related psychological processes, the relations with the context (physical, sociological, cultural, etc.) that allow to integrate the whole process, etc.

c) Principle of Global Coherence: the phenomena considered in previous points a) and b) do not happen case to case at organic, cellular, or other levels, but they obey to a global

coherence proper from the individual that defines its specific entity - the person.

Example: the muscle, let us return to it, is much more than a set of fibers that sometimes contract... and relax.

Understanding Man is certainly much more complex than we often want to believe (or want to make us believe).

Sport, tool of Man's formation, of leisure, of education, of spectacle, ... and of so many other things, is still 'unknown territory' that deserves to be explored in much more efficient ways and with other types of pleasure.

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