

Clinical Orthopedics and Trauma Care

António Vicente *

Open Access

Research article

In a World of Paradoxes, Conflicts and Contradictions the Need for Disambiguation

Almada, F.1, Fernando, C.2 and Vicente, A.3*

¹Retired University Professor / Independent Researcher

²University of Madeira - CITUR

³University of Beira Interior – CIDESD

*Corresponding Author: António Vicente, University of Beira Interior – CIDESD.

Received Date: October 20, 2021; Accepted Date: November 29, 2021; Published Date: December 06, 2021

Citation: Almada, F., Fernando, C. and Vicente, A. (2021) In a World of Paradoxes, Conflicts and Contradictions the Need for Disambiguation. *J. Clinical Orthopedics and Trauma Care*, 3(2); DOI:10.31579/2694-0248/015

Copyright: © 2021 António Vicente, This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Today we begin to have the knowledge that allows us to face man in a dynamic and dialectic perspective, as we have long desired (see, for example, the definition of health by the World Health Organization, 1948, as a state of equilibrium – therefore dynamic). However, an intention is not enough. We have to better understand the phenomena, of course. And differently. There is a need for a rupture in strategies, methodologies, instruments (conceptual and material), an adequate conception and with the appropriate degrees of freedom. This work intends to be as a contribution to this rupture (see Thomas Kuhn). Not only in health, but in general, because man is always, (as a phenomenon, as a sign or as the observer), a fundamental part of our visions. In this article we propose two conceptual tools: ARAT (aggression / reaction / adaptation / transformation - as a factor of transformation) and Mental Schemes (as a factor of stability which, therefore, goes beyond a centralization in the nervous system). Tools that allow us to access causalities (not only in their consequences, which are the facts, events, where we often focus our attention), because they guide and justify (substantiate the functionality) the action of man in every field (in education, health, sport, leisure, politics, economics, tourism, etc.) showing how and why man works.

Keywords: man; functionality; dialectic; rupture; science; education; sport; health; economy; tourism; politics

Introduction

Regardless of the perspective with which we deal with man (science, education, health, economy, sport, politics, tourism, etc., or in its subdivisions which we call "specialties"), it is always the same man who is concerned and which is the object of the treated phenomena.

Understanding the functionalities of this man (that is, having models that allow us to understand and explain the coherences and balances that support the functioning of this man (and not "the search for the truth"- as it once was done, even in science) allows us a more incisive intervention, whatever the scope in that we do.

It is no coincidence that the World Health Organization (WHO) since the 1940s has defined Health as a state of equilibrium (as opposed to the absence of disease), but that it has been so difficult to operationalize. And it will certainly not be, we believe, by deepening some (or even all) areas of knowledge and disciplinary expertise, that we will be able to achieve this goal.

A rupture with the still dominant framework of the isolation of events, or even processes, which facilitates their treatment, is necessary. Thinking

about a world of dialectics allows not only for a more rigorous, precise and efficient vision (an efficiency that comes from only paying the costs inherent to the benefits earned), but also to make the most of the means and instruments that we increasingly have (in quantity and quality).

"Nature" simplifies (the principles phenomena obey, but not the phenomena itself), adjusting the strategies to the available means. The evolution of man is a whole story of this adjustment between the means and resources available, the challenges that one seeks to respond to and the adaptations that are being made. But sometimes we forget that the "whole" is more complex and that the capabilities we've developed allow us to go deeper and gain more powerful efficiencies.

We survived. But the past does not guarantee the future for we are not the only ones to change. Competition is hard. Going as far as our limits allow is not an option, it is a necessity.

A Framework

The rupture, any rupture (in the Kuhnian sense of the term), implies taking care of the presuppositions on which we base the proposals for alternatives. That is, simplifying a lot, dealing with what in mathematics

will be axioms and postulates, from which reasoning is developed in order to reach a corollary.

The "new science", the one that is in a crisis that justifies the rupture and the one that allows for an alternative that legitimizes the search for a rupture, are works that have to be built, in a building that requests the necessary elements (the foundations, the components and the elaboration, at least) so that the resulting product can take place.

Thus, we have principles, circumstances, ideas, opinions, assertions, conditions, antecedents, precedents and so many other notions that support us, as foundations. But they can, in another way, serve as "blocks", as elements that allow us to shape the buildings of reasoning that provide us with the syllogisms, conclusions and inherent consequences [1,2].

The "search for the truth" and "certainties" through "demonstrations" was a strategy followed, in the evolutionary process of man, with the restricted means it had (capacity to: 1- receive information, stimuli; 2- accumulate and treat this information; 3- develop ways to use this knowledge; 4-devise ways to use it to operationalize; 5- create the technologies that allow operationalizations and, what is often forgotten, learn from the mistakes made to reformulate all this process, not only to correct the answers immediately, but also to gain efficiencies for predictable situations in the future), to face the challenges it faced [3].

We can, in another way, in another framework and with other terminology, say that we must consider the coherence we manage to achieve and the balances that support it.

When the "search for the truth" was the objective, the certainties obtained (demonstrated) helped us to bear the insecurities and anxieties. Insecurities and anxieties that came not only from the awareness of existing ignorance, but also from the risks (which led many to the fire, let us forget) of going against established certainties (another insecurity reaction). Treating the part, the event was a form of defense that allowed them to escape (literally) from the danger of approaching controversial issues (and authoritarian powers) [4].

"Living on the shoulders of giants", an expression (well-known when used in relation to a "golden" generation, including Newton, Darwin, Lamarck, Mendel and many others who still mark thought nowadays), but that was already used in the 12th Century, attributed to Bernardo de Chartres, and used on many occasions and in the most varied situations. It was a way of paying homage to the predecessors, but also a transfer of responsibilities to those who could no longer be "called to court" or the "files of faith". Aristotle, Plato, Zeno of Elea (as discussed for example in "To Evaluate is a Self-Evaluation too. Dialectical Features & Knowledge" [5] marked positions, being protective shields.

"Living on the shoulders of giants" is a privilege, but it has its risks, as Umberto Eco explains, with some humor (but also realism) in "On the Shoulders of Giants", "Perhaps giants that we still ignore if they are already moving in the shadows, ready to sit on our dwarf shoulders".

We counter:

Ao nascer,
Uma raiz ao chão me prendeu
Foi por ela que cresci
E que deixei de ser eu FA

At birth, A root held me to the ground It was from her that I grew up And that I stopped being myself

Metaphors and paradoxes are also safeguards that allow us to evade responsibilities, but they also have an essential function, although often forgotten to illustrate, or even caricaturize (a caricature is a selection of the most striking features of an image or idea) what we can't (or we don't know) to describe in its fullness, but it is passable by a vast and broad notion (although with the risk that the interpretation made by the recipient of the message exploits this vastness and breadth – but in any situation

the dangers exist because the words are no longer than vague indications, even when explicit)⁶.

A root to the ground held us (an allegory to shorten communication).

Once the conditionings and framing of our work are defined in broad strokes (space is always limited), our proposal regarding the conception of man, its functionalities, and consequences, is:

1. THE PROBLEM

The problem is change.

A change that we can guess or even unravel where we came from. Many sciences are dedicated to this.

But for us to have a strategy for the continuation of our evolutionary process, it is essential to define goals.

Where do we want to go?

Everything changes, everything transforms. Man, the element of this whole (from man point of view), also changes and transforms. But how? In what ways, and why? What causalities, what consequences and effects? [7]

Far from being able to debate about its deeper genesis, we can (now - 20 or 30 years - we have the means, although we sometimes lack the will) to think about its functionality, which will give us resources and tools to act more efficiently than occasional attempts and the partial visions in which we move, often at the mercy of slogans that we cannot understand or explain, but which, being banalities, can run free from criticism and opposition, as they are part of the imaginary of frivolities.

2. THE CONTEXT

The context is not made up of a simple accumulation of events. It is a process in which, in addition to its particular and local aspects, it constitutes a globality with its own coherence and balances that mark goals and constraints [8].

It is not enough to talk about changing the context in which we live. It is necessary to try to define (not merely describe fantasies and slogans) what a post-rupture can be and how we can reach the conditions for a rationalized and conscious rupture to take place.

We are on the brink of a rupture (which we hope will happen in the short term so that there will not be a catastrophe). It is necessary to operationalize it.

We exemplify here in a necessarily brief, succinct and schematic way.

We cannot forget that to have strategies we must know the problem we intend to solve, the context and define goals. This is the base, the starting point.

The options are made in a next phase, to create the conditions so that the solutions can be made available next.

We have, of course, a sequence of the operative process: 1- definition of the problematic (problem, context, ...); 2- realization of options; 3- design of solutions ... (strategy, tactics, technologies, operating modes ...)

And there is not only one solution, one point of view.

To clarify, we exemplify:

A. MAN - THE RELATIVE WEIGHT IN THE STRUCTURE

Man has always lived in society. But today the relationship between leaders / effectors (executors) has changed.

- The ideal was (was) a few leaders (just enough to be efficient), effectors strictly controlled for the "mechanism" to work perfectly (*Fordism* was an important progress). Strictly controlled means few ideas, limited innovations;
- Today effectors are algorithms controlling real mechanisms, or even swarms of mechanisms.

Meaning – Lots of people freed to take decisions (if they know ... and if they want). But competition is hard. Going as far as our limits allow is not an option, it is a necessity.

B. MAN - RESTRUCTURING OPTIONS

- I. In the past we had the following sequence: 1- an offer created and made available by "the jungle", and then by the "industry / commerce"; 2-options chosen by the consumer within the existing offer; 3- acquisition and use:
- II. In the present situation, we have the following sequence: 1- option in defining needs / desires (as you do, for example, in computers and even less in cars another discussion in another debate); 2- availability by the industry / commerce of the intended means; 3- acquisition and use.
- Note 1: We are in a dynamic framework in which we must think about processes and not about sets of events that accumulate. Reformulation of the whole is essential.

Note 2: Man can always exist as a consumer, giving a meaning (an orientation) to the context. With the existing "opinion making" capacities (the weight of "information", publicity, manipulation,...) and the (conceptual and operative) incapacity of education, he will consume whatever is enforced on him. It is, once again, the concept of man that is at stake. That is, if the concept of man utilized is decisive, and that is why we defend the need and urgency of a technological leap in this area, the rupture in the conception of man and his functionality, because the context changed.

The context is not imposed on us (man). Existing capacities (the result of work over millions of years of an evolutionary process) increasingly allow us to act (in a dialectical process) on available conditions.

Here, too, it is necessary to understand the functionality (of man, the context, the relationship) so that we can choose as shown in the schematic examples above.

The increasingly capable existence of tools such as automation, robotization, artificial intelligence, information technology, telematics, ..., creates conditions for man to have services, tools and means, increasingly preforming and adjusted to their needs and / or wishes. Unless man is himself the service of the needs and / or desires of something (thing, entity, power, imagery, set of slogans, ..., that he imprisons and uses ... or was imprisoned and used by...).

3. CONSEQUENCES

It is necessary to create not only the projects of what we want and would like to build, but also the strategies, tactics, operating modes, necessary technologies, and tools to build the future. Alternatively, we go where we want, letting chance play. Or a "natural selection", which is nothing more than a set of chances in which, eventually, those who become more fit win (if they are not unlucky).

Or an adaptation to the environment that is not well known how it happens, but due to lack of resources (... "the island is small, we have to reduce our dimensions" ...), or that due to the imposition of needs, we are forced to make adjustments (... "the leaves are tall, the neck has to grow" ...), adaptations prevail.

But let us leave Darwin and Lamarck, and many others, who in their time did their work (and it was not easy, we have to admit, because in addition to advancing with conjectures, they had to break down obstacles, what cultures, what societies, what masses (most of the times amorphous), but not harmless, what hidden deities, what inertia and immobility, what hidden intentions and interests not always hidden, ..., put them in their path and tried to bring them down (literally).

Let's make our way. Which is neither easy nor harmless, too, thinking of alternatives, proposing conjectures and options, looking for solutions, debating positions and ideas, ..., looking for what we still ignore in the unknown^{9,10}.

Rejecting the security of the established and installed, and furthermore instituted and institutionalized, in "worlds" as vast as education, culture, health, industry, commerce, leisure, economy, politics, tourism, ..., because in all of them man is an actor, author, creator, protagonist, promoter, agent, phenomenon, interpreter, ...

It is in man, we think, that the rupture must happen, the crisis has to be unlocked. It is time for us to look at ourselves, not to carry out another revolution and find the "new man", expressions of ill omens as they mark situations and pseudo-experiences and pseudo-sciences, in which so many mistakes were made and so many mistakes were made that we can hardly go along this path without the ghosts of the past assaulting us.

4. THE SPORT [11]

The crisis we live in today and which is recognized by all, demands a change, imposes a rupture on us (in the Kuhnian sense of the term).

As we said above, it is in the conception of man that we can obtain more gains and better efficiencies. A man who thought he had five senses (all outward facing) because he forgot to look at himself.

The information that can be obtained in this way (it is already obtained), must be structured and systematized so that it can be useful (the accumulation of information has costs, knowledge occupies place, and we are already paying important amounts to maintain piles of knowledge, transmission of information, consultation of banalities, ...) through a thoughtful and guided application.

Given the impossibility of traversing the path we proposed in the previous point in the space of an article (which we will do as far as possible in books and other publications), we leave here an example of what the door can be opened in the context of sport (our origin study area), through the definition of what this phenomenon can be, which has such social acceptance, which motivates individuals and groups, with a huge weight in the economy, education, leisure, health...

"In the interaction of man with the context, phenomena of mutual adaptation are permanently established. When this dialectical relationship is established based on kinesthesia and the formation of man is fundamental, we are faced with a sporting activity" proposed by Almada, F. [12]

This allows to leave empiricisms and studies in restricted areas of knowledge (such as physiology, anatomy, psychology, ..., which conditions that its management is done not in its entirety, but in partial aspects of it), for an interpretation of the sport phenomenon as an activity within the above conceptual framework and focusing on its functionality and not on the forms used to describe it.

5. Answering the problem

When we stop focusing our attention on the incidents on the way and we manage to focus on the functionality of the phenomena, we realize that the models that translate their modes of operation are practically identical or even the same (a nuclear power plant, a cell, an aircraft engine, a sailing vessel, a hydroelectric power plant, ..., are all made up of an energy

source, energy transformers that transfer the energy from the source to the desired form, usually with some energy accumulators to support the process or optimize the way we intend to use the energy) [2]

We have a flow that we lose track of if we employ wrong concepts such as "produce", "spend", "consume", ..., energy, (and, in sport, another example, confusing more force with more speed – a consequence with a mean, among others, to achieve it) in an accumulation of successive errors that hide the functionality of the phenomena from us and lead us to lapses and mistakes that, sometimes have serious consequences.

With the concept of human functionality, something similar happens, in a process that is treated with incorrect (conceptual) tools, with methodologies that do not correspond to the needs (namely because they often forget to carry out the change that is required in passing the study from isolated events to the dynamics of the whole with its dialectics) and, unsurprisingly, reaching inadequate conclusions (in light of what we know today), because the coherences and balances (efficiency) that are possible today fail¹³.

A process further aggravated by the fact that man, part of the process, but also an observer of the phenomenon, cannot help but imagine himself above realities, a kind of special divine creation that can be abstracted from the rules of vulgarity. In this way, it makes two mistakes: 1- the "realities", "the truths" that it considers are nothing more than interpretations that it makes of what might exist, based on very restricted and truncated information, due to its limitations (resulting from choices made in the million years of its evolution, which we call "the senses", which condition the ability to read phenomena); 2- despite, presumably, considering himself outside the process he calls "nature" (which he imagines green and where he goes when he leaves the city where he lives), man is, after all, in his own right, an integral part, albeit tiny, of something as fantastic as the Universe (which one should be humbly proud of).

As EVERYTHING CHANGES AND EVERYTHING IS TRANSFORMED, man (life?) adjusts his position by adapting to the circumstances and interfering in the ways he succeeds and judges more favorable with the context, in dialectics (mutual interference). Understanding this dynamic, therefore the man and the context and the ways in which they interfere, allows us not only to obtain better efficiencies in action, but also to make fewer mistakes.

To understand the phenomenon, the dynamics of man in this adaptation process, it is not enough to accumulate data and information. It is necessary to formulate conjectures, create coherent explanatory models (that is, encompassing the knowledge we currently have or rejecting part of it through refutation) and considering the existing balances (existing dynamics and dialectics, or refuting them), in order to go through unknowns and perceiving frontiers of ignorance.

Knowledge is not fundamentally a cumulative process, we repeat, above all, even when we live, as nowadays, in a crisis (see Thomas Kuhn) that imposes a rupture, as is generally accepted. As Karl Popper told us, in defense of the conjecture/refutation: "...we will never be able to prove that all swans are white, but one black swan is enough for us to be able to refute the statement...." Exposing our position to the scientific community allows us to make room for someone to find "the black swan" that refutes, whatever the area of knowledge in which this happens, with man as a phenomenon, sign or observer. Although knowledge is still very much dominated by areas and disciplines that were important tools in earlier stages of development.

Without going further to the heart of the matter, to respect the space of an article, (that is however, element of a set, with more than thirty articles already, of which we cite some because of their complementarity in

relation to this theme), but doing it in the form of a book that will be soon published under the title "The Next Technological Determinant Jump: Interpretation of Human Functionality with the concepts of ARAT (Transformation) and Mental Schema (Stability)", from which we quote points that we consider key. From it we also extract two tools that, despite their simplicity, but in line with what we defend above, allow us to make a rupture (see Thomas Kuhn) in the understanding of the functionality of man within the framework presented above.

Man does not change randomly, nor solely through the pressures of context. The causalities that underlie his change can be apprehended through:

It Is In This Framework That We Propose The Following

CONCEPTUAL TOOLS, THE CONCEPTS OF:

A. MENTAL SCHEME - stability factor

When an action is requested and / or a functionality is actuated, tracks, pathways, which, through repetition, gain solidity, and can even be stabilized and consolidated (such as the myelination of a nerve).

Note that mental is a much broader concept than "nervous system".

B. **ARAT** - aggression (stimulus); reaction; adaptation; transformation - transformation factor

The transformation happens not because new elements are added or accumulated (by prostheses, that is, accessories, additions), but because an aggression (a stimulus that fits the range of individual sensibilities sufficient, but not excessive) triggered a reaction that led to an adaptation. An adaptation that can be temporary or stabilized.

Some principles that guide change (quotation from the above-mentioned book):

- Principle of economy: which establishes how adaptations that are not requested for some (specific) times are set back (regulating the cost of their maintenance and the cost of their recovery; such as deciduous trees or loss of muscle tone);
- Principle of availability: which shows the adaptation of strategies to the limits of existing potentials (how pain stops requests made when the capacity for adaptation is almost reaching its limit);
- Principle of global coherence: which indicates that there is a global coherence (which defines the individual) that regulates requests and resources not only at the local level, but across the whole (such as the mobilization of segments to maintain the balance of movement in the performance of a stock);
- Principle of convergence of resources: which establishes that in cases of lack or shortage, the available resources are directed to where there is greater need (such as, when oxygenation fails, the protection made to the central nervous system; or the mobilization of resources for the site of an infection).

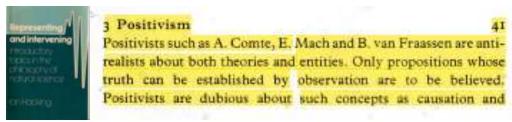
Conclusion

Thinking about the whole (not only the facts, or, worst, their descriptions, but their dynamics), right from the start, is fundamental, so that we can understand the possible dynamics and dialectics and make choices.

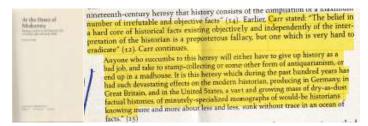
A structuralist conception (from a current perspective of structuralism) may be a possibility.

A CLARIFICATION AND JUSTIFICATION

Ian Hackin stated:



And even in fields like History, David Levine in "At the Dawn of Modernity", declares that:



But this were in the last century. The need to go beyond the boundaries of the area to seek answers in terms of epistemology, methodologies, scientific policies and similar themes was pressing, so that the evolution of knowledge could take place in an efficient and consistent manner. Einstein, Popper, Kuhn, Lakatos, Putnam... We quote this last one:



Philosophers should not be specialists. For myself, I am interested in science and in philosophy only because I want to learn something about the riddle of the world in which we live, and the riddle of man's knowledge of that world. And I believe that only a revival of interest in these riddles can save the sciences and philosophy from an obscurantist faith in the expert's special skill and in his personal knowledge and authority.

These attitudes are perhaps a little parrow (can the growth of knowledge

These attitudes are perhaps a little narrow (can the growth of knowledge be studied without also studying nonscientific knowledge? Are the pro-

It is not strange that there is a dominance of physicists and mathematicians in the first phase. The development and security found (at this time) in their areas of knowledge justified it.

Today, many of the examples are well known of those who "walk the science debates" and there would be so many that we refuse to list them here.

We too, in the preparation and foundation of the book we have prepared on the functionality of man under the title "The Next Technological Determinant Jump: Interpretation of Human Functionality with the concepts of ARAT (Transformation) and Mental Schema (Stability)", have published some articles, in our strategy of submitting to the scientific community, exposing them to criticism and refutation, positions that we believe will give us some solidity [note: despite the doubts we raise in the science policies that underpin them, as we exposed in some of those articles and as whenever possible we manifest].

Without entering into this debate, because that would distance us from the topic and intention of this article (but see Putnam's quote above; a

quotation we made with this intention of defining too our position), two issues present themselves in the research strategies, both useful and legitimate, if used consistently:

- I. We know what we know and use it to deepen and consolidate that knowledge;
- II. We don't know what is unknown, but we look for, based on found inconsistencies, anomalies, failures, crises, artefacts, etc., we look for a way to maintain coherence and balance. For what we need models (formal or not) that allow us to detect deviations from what is expected.

Note that the relative weight of each of these two strands of research, which was largely dominant in I., tends to invert positions. Even because I.'s research can (and is) increasingly automated and to become robotic (see, as an indicator, the huge databases that are made available to whoever wants to interpret them, or that are accumulated in data repositories that lose validity because the hardware that supported them is no longer available as they are replaced by more modern equipment).

SYNTHESIS

WE DON'T HAVE ONE MAN FOR EACH SITUATION, BUT ONE MAN SEEN FROM DIFFERENT POINTS OF VIEW

There is not such things as an:

- HOMOEDUCANDUS
- HOMO INFIRMORUM
- HOMO ECONOMICuS
- Etc

NO SLICES



A MAN

A PERSONALITY

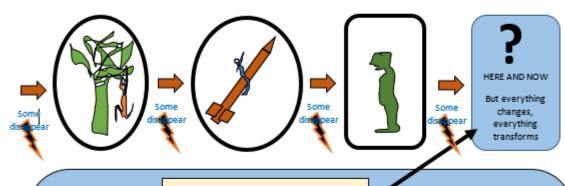
A SELF

OBSERVED FROM MANY INTERNAL AND EXTERNAL POINTS OF VIEW



BUT IT IS NOT A HOMO-AETERNUS

BECAUSE IN AN EVOLUTIONARY PROCESS - IT HAS A PAST MADE OF DIFFERENT VIENCES AND A FUTURE WITH DIFFERENT GOALS / AMBITIONS / FEARS



THE SCOPE OF THIS WORK

Not randomly but

ACCORDING TO PRINCIPLES AND PROPENSES – that it would be useful to know, define and understand – know the laws, principles and rules to which it obeys - which allows intervening in the evolutionary process and in the intended balances.

More than facts, which, in depth, are always particular cases, it is important to know the laws, principles and rules that give us an overall view where the facts fit or refute the elaborated conjectures.

References

- Almada, F., Fernando, A., Lopes, H., & Vicente, A., (2018). Operationalization of the "Human Body Domain": A Structural and Functional Conception. *Journal of Physical Fitness, Medicine & Treatment in Sports*, 4(2), DOI: 10.19080/JPFMTS.2018.04.555633.
- Almada, F., Fernando, A., Lopes, H., & Vicente, A., (2019). For a Vision of Man in a Dynamic Framework: Promote Equilibium Versus Add or Remove 'Parts' - Facts, Strategies and Operational Modes. Orthopaedic Surgery and Traumatology, 2(5), 407-416.

- Almada, F., Fernando, A., Lopes, H., & Vicente, A., (2018).
 Winning Efficiency. Journal of Physical Fitness, Medicine & Treatment in Sports, 4(2), DOI: 10.19080/JPFMTS.2018.04.555634.
- Almada, F., Fernando, A., Lopes, H., & Vicente, A., (2019). Searching for Coherences and Anomalies. *CPQ Orthopaedics*, 3(5), 01-08.
- Almada, F., Fernando, A., & Vicente, A., (2021). To Evaluate is a Self-Evaluation too. Dialectical Features & Knowledge. Global Journal of Orthopedics Research, 3(3), DOI: 10.33552/GJOR.2021.03.000563.
- Almada, F., Fernando, A., & Vicente, A., (2021). Conceptual Tools to Think Man. Advances in Orthopedics and Sports Medicine, 2021(4), DOI: 10.37722/AOASM.2021402.
- Almada, F., Fernando, A., Lopes, H., & Vicente, A., (2019).
 Man: The Profound Change. American Journal of Biomedical Science & Research, 6(1), DOI: 10.34297/AJBSR.2019.05.000997.
- Almada, F., Fernando, A., & Vicente, A., (2021). Strategical, Tactical and Operational Errors in Science and Knowledge in General. CPQ Orthopaedics, 5(3), 01-12.

- 9. Almada, F., Fernando, A., & Vicente, A., (2021). Science and Knowledge Investigation and Decision at 2, 3, 4, 5, n Dimensions. *Biomedical Journal of Scientific & Technical Research*, 35(2), DOI: 10.26717/BJSTR.2021.35.005672.
- Almada, F., Fernando, A., & Vicente, A., (2021). New Research in Science but not Only: Conceptual Research on Knowledge - Structures Blocking and their Causes. Novel Research in Sciences, 5(5), DOI: 10.31031/NRS.2021.05.000621.
- 11. Vicente, A., Fernando, A., & Lopes, H. (2014). A multidisciplinary approach of sport. *American International Journal of Contemporary Research*, 4(1), 286-290.
- Almada, F., Fernando, C., Lopes, H., Vicente, A., & Vitória, M.
 (2008) A Rotura Estratégia de Operacionalização: A Sistemática das Actividades Desportivas - Um Ponto da Situação. VLM.
- 13. Almada, F., Fernando, A., & Vicente, A., (2021). To Evaluate is a Self-Evaluation too. Dialectical Features & Knowledge. *Global Journal of Orthopedics Research*, *3*(3), DOI: 10.33552/GJOR.2021.03.000563.



This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here:

Submit Manuscript

DOI: 10.31579/2694-0248/015

Ready to submit your research? Choose Auctores and benefit from:

- > fast, convenient online submission
- > rigorous peer review by experienced research in your field
- > rapid publication on acceptance
- authors retain copyrights
- > unique DOI for all articles
- > immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more https://auctoresonline.org/journals/journal-of-thoracic-disease-and-cardiothoracic-surgery