FOR A GENERAL THEORETICAL UNIFIED AXIOMATIC REDUCTION OF THE NATURAL SPACES*

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PARA UMA REDUÇÃO AXIOMÁTICA UNIFICADA TEÓRICA GERAL DOS ESPAÇOS NATURAIS

ABSTRACT: This study introduces a unified theory of utmost amplitude. Its development rests on the factual presupposition that the physical, mental and social spaces (fields) are inseparable and are only separable by abstraction. This assumption facilitates the formulation of this apparently without precedent unified theory of spaces. Five postulates (or axioms) are induced from reality and 23 theorems are deduced from the postulates. All propositions must be confirmed or may be confirmed by empirical research. Importantly, there is a maximum of complexity in the mental and social spaces, above all in the social space, which is a derivation from the mental one. The presented theory is deterministic and, as such, does not abandon the terrain of probability, at the utmost is only highly probable.

Keywords: Fields. Axiomatic unified theory. Postulates. Theorems.

RESUMO: Este estudo introduz uma teoria unificada de máxima amplitude. Seu desenvolvimento repousa na pressuposição factual de que os espaços (campos) físicos, mentais e sociais são inseparáveis e são apenas separáveis pela abstração. Essa suposição facilita a formulação dessa teoria dos espaços unificada aparentemente sem precedentes. Cinco postulados (ou axiomas) são induzidos da realidade e 23 teoremas são deduzidos dos postulados. Todas as proposições devem ser confirmadas ou confirmáveis por pesquisa empírica. É importante ressaltar que há um máximo de complexidade nos espaços mental e social, sobretudo no espaço social, que é uma derivação do mental. A teoria apresentada é determinista e, como tal, não abandona o terreno da probabilidade, no máximo é apenas altamente provável.

Palavras-chave: Campos. Teoria axiomática unificada. Postulados. Teoremas.

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1 INTRODUCTION

> At the end of his career, Albert Einstein was pursuing a dream far more ambitious than the theory of relativity. He was trying to find an equation that explained all physical reality - a theory of everything. He failed, but others have taken up the challenge in a remarkable quest that is shedding light on unsuspected secrets of the cosmos.
> It is the dream of a theory of everything through Newton, Maxwell, Einstein, Bohr, Schrödinger, Feynman, Gell-Mann, Weinberg, and other great physicists, charting their progress toward an all-embracing, unifying theory. (…) toward an ultimate, as-yet-unfinished masterpiece."
>
> *The Theory of Everything: The Quest to Explain All Reality [Audiobook]*
> *By Dr. Don Lincoln (Author, Narrator), Experimental physicist,*
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However -- the present author must say -- "e*verything" or "all"* (HAWKING, 2010) *is not restricted to the domain of physics, or to any other specific domain of human knowledge. The present study is a modest attempt to include, by theoretical reduction, all scientifically cognizable reality: the physical, mental and social fields (spaces).*

It is here initially suggested that there is no real separation of the physical, mental and social fields, a factor that should facilitate a unified theory of these fields. The usual separation is thus a mere abstraction, not a reality. And the idea of a continuous interaction between nature and the human being approximates the obvious. Moreover, nature is the ambiental space where the human mental and social interactive with nature occurs.

It is necessary to be attentive that nature – *be it terrestrial or already primordially cosmic – is in the human and in his or her exterior, forming his or her environment. Therefore, the physical space (nature) will be a constant along the postulates and theorems of the present study.* The spatial reach is magnificent because it is already initially cosmic.

The physical, mental and social spaces present a progressive complexity from the physical space on, and there is a maximum of complexity in the mental and social spaces, above all in the social space, which is a derivation of the mental one. Thence the general theoretical unified reduction of these spaces do not exceed an only tentative stage.

It is worthy of note that not even in Physics, whose object, although complex, is less complex, it was achieved a unified theory of its fields (SOUTO, 2006).

Already Schenberg observed that "generally speaking our intuition (…) is the intuition of the world that more or less corresponds to that one of Newtonian physics, not to the relativistic physics and still less to the quantic mechanics" (SCHENBERG, 1985, p. 143). Perhaps this is so because our intuition has the presentiment of a fundamental unity subjacent to the specificities.

2 POSTULATES

1. In the physical, mental and social spaces (fields), the more energy and the less distance, the more attraction.

2. In the physical, mental and social spaces (fields), attraction varies in the direct reason of affinity and in the inverse reason of distance.

3. In the physical, mental and social spaces (fields), the less distance the more attraction and repulsion.

4. In the physical, mental and social spaces, since these fields are separable only by abstraction, the equilibrium in each one of these fields (spaces) always causes equilibrium in the other two fields, and the disequilibrium in each one of these fields (spaces) always causes disequilibrium in the other two fields.

5. In the physical, mental and social spaces (fields), the larger the idea of similarity, the larger the agreeableness, and the feeling of agreeableness, or of preponderant agreeableness in face of something, always causes approximation or a resultant of approximation towards this something, with emission of energy of equilibrating (cohesive, integrative) mental waves. Inversely, the larger the idea of dissimilarity, the larger the disagreeableness, and the feeling of disagreeableness, or of preponderant disagreeableness in face of something, always causes, respectively, separation or a resultant of separation towards this something, with emission of energy of disequilibrating (discohesive, desintegrative) mental waves.

3 CLEARING UP

Concerning the second postulate, we as yet do not have scientific data about the velocity of the human thought, presumably greater than the velocity of light – data that would make possible a satisfactory quantification of the unified proposition. *It is still for notice that affinity is object of study of both Chemistry and Physics*.

The quantic physicist David Bohm warns that "(…) if we were more rapid than light (…) our atoms would be dispersed and we would fall into pieces" (BOHM, 1988, p. 122). However here it is not the case that our bodies move quicker than the light, but only it is referred the possibility that a human mental emission be more rapid than the light. It seems clear that by the reference to velocity of thought the obvious mention is to a possible radiant energy not confined to the space of cerebral neurons.

Regarding quantification, it is noteworthy Einstein's classical thinking, according to which "in so far as mathematical propositions refer to reality, they are not exact ("sicher"), and in so far as they are exact, they do not refer to reality." (EINSTEIN *apud* ALDRUP, 1977, p. 174).

In any branch of knowledge, the difficult mission of the theoretician is to proceed beyond the academically usual. In the mere repetition, or in the merely formal, be it logical or mathematical, is not created a content of knowledge.

In a similar way, Lakshmikantham et al., in their study "The Hybrid Grand Unified Theory", state: "to solve long standing unsolved problems, to resolve unanswered questions and unsettled issues of physics, mathematical modeling is inadequate. We need qualitative modeling, which is the complement of mathematical modeling". Moreover "mathematical models they can only describe the behavior of a physical system but cannot explain their behavior" (2009, p. 44; 90).

It is also noteworthy that Newton asks tolerance for his work, since he was exploring a so difficult subject (Newton, final of the Preface, first edition of the *Principia*).

In the present theoretical construction, the postulate *5* represents the maximum of complexity. And in this postulate, the mental is represented by idea and feeling, being implicit the will, the motor of action.

Present science is orientated by humility. Physics, the more developed human science, affirms itself indeterminate, inexact, uncertain, even in its deterministic propositions, that are only highly probable (HEISENBERG, 1958, 1986).

Even so Einstein states: “I still believe in the possibility of a model of reality – that is to say, of a theory which represents things themselves and not merely the probability of their occurrence.” (EINSTEIN, 1954, p. 276).

Nevertheless, the real and the only probable are inseparable in the present stage of substantive science.

It must be observed that the high probability in science (even in the deterministic construction of Physics) pays the price of approximation. of evidence. As in the Newton’s classical law of the universal gravitation. At bottom there is a tendency to the obvious: the more the mass and the less the distance, the more the attraction. Or in the important equation of energy by Einstein, in which remains the tendency to the obvious: the energy would vary in the direct reason of mass and velocity.

The far-famed Einstein’s equation of energy, if refers to light, does not present the greater dematerialization of referring to the human thought, energetic modality presumably more subtle and more rapid.

It seems to exist a growing “dematerialization” of nature that goes from the attraction of masses passing by the attraction and repulsion of electricity, until the sophistication of the mental and social in refined movements of approximation and separation -- for here is the human mental and social in a greater complexity and with greater wealth of nuances. The human mind has as infra-structures the physical- chemical and the organic but is a new and more subtle reality. However, in spite of this subtlety, the mental and the social are explicable, as all seems to indicate, by a theoretical deterministic simplicity.

It seems also undeniable that thought is an energetic modality that is part of nature and, as such, would deserve a rigorous scientific consideration. However, alluding to Psychology itself, Hofstätter affirms that “our science still waits its Newton” (HOFSTÄTTER, 1981, p. 5).

It seems even possible a more general unified theoretical explanation, because referred to the behavior of superior animals (SOUTO, 1990; SOUTO, 1991, p. 303-309; SOUTO, 2000, p. 138-146).

All this is not astonishing: for Newton, nature is satisfied with simplicity and dislikes the pomp of superfluous causes (NEWTON, 1955, p. 270).

In the present article 23 theorems are deduced from the postulates. Other theorems are deducible.

It is known that the theoretical scientific activity reaches its maximum of rigor in the axiomatic construction. But the word “always”, implicit or explicit, in the construction of deterministic postulates, means only a high degree of probability.

Reichenbach affirmed classically that, rigorously speaking, we cannot state nothing about reality, whose validity may be affirmed with more than probability. (REICHENBACH, 1949, p. 10).

The axioms or postulates are obtained by induction of the concrete particular and from them less general propositions, the theorems, are deducible, theorems that would be explained by the postulates.

According to the scientific protocol of the rigorous theoretical axiomatic construction, no postulate is deduced from other postulates and the postulates are necessarily in small number. All propositions must be confirmed or may be confirmed by empirical research.

For preparatory antecedents of the present construction, Cláudio Souto, 1984, 1986, 1987, 1988, 2002, 2006, 2015, 2018 (all these bibliographical references).

4 THEOREMS

1. (*Ceteris paribus*), in the physical, mental and social spaces, the less space, the less time, and the more space, the more time.

2. In the physical, mental and social spaces, the larger the idea of similarity in the interactive system (and consequently the larger the agreeableness of feeling), the more rapidly the passage of time will be experimented.

3. If there is force of repulsion between interactive poles in the physical, mental and social spaces, the greater the distance between these poles, the smaller the repulsive force between them.

4. If there is force of attraction between interactive poles in the physical, mental and social spaces, the smaller the distance between these poles, the greater the attractive force between them.

5. In the physical, mental and social spaces, (ceteris paribus) if there is agreeableness of feeling (corresponding to approximation) the eventual emotional intensity is smaller, with less dissipation of energy, than if there is disagreeableness of feeling (corresponding to disapproximation, separation).

6. In the physical, mental and social spaces, if there is permanent equilibrium of the interactive system, the resulting process is associative.

7. In the physical, mental and social spaces, the more the similarity among the interactive poles (such as defined in function of what they accept), the greater the equilibrium of the interactive system. The decisive is the idea of similarity with what is accepted.

8. In the physical, mental and social spaces, the smaller the distance among interactive poles, the greater the relative index of interaction among them (the relativity of the index of interaction has reference to the number of interacting poles, and this index refers to the frequency and duration of the interactive process).

9. In the physical, mental and social spaces, if the idea of similarity is greater than the one necessary for the permanent equilibrium of the interactive system, the resultant process is of the greatest agreeableness (= greatest affective suaveness = peace).

10. In the physical, mental and social spaces, the more the peace of the interactive system, the greater the equilibrium of this system.

11. In the physical, mental and social spaces, the greater the standardization (uniformization) of the element idea of interactive poles, the grater the similarity among these poles and consequently the greater the equilibrium of the corresponding system of interaction.

12. In the physical, mental and social spaces, if interactive poles have their element idea scientifically standardized, to this extent there is the maximum possibility of equilibrium of the corresponding system of interaction (maximum possibility of peace).

13. In the physical, mental and social spaces, if interactive poles have their element idea standardized, scientific-empirically inclusive, to the extent of this standardization, the element "feeling" in the general direction of the feeling of agreeableness, is the main factor of change (smaller or larger alteration) of the corresponding interactive system (and not the element "idea", which, in the mentioned extension, may be considered a constant).

14. In the physical, mental and social spaces, the more the equilibrium of the interactive system, the more promptly this equilibrium controls any event that may disturb the integrity of the system.

15. In the physical, mental and social spaces, the smaller the distance among interactive poles, the lesser energy will be necessary for communication and control.

16. In the physical, mental and social spaces, in the interaction of peace, there is the minimum of energy necessary for communication and control.

17. In the physical, mental and social spaces, change is a constant, and the greater the idea of similarity among interactive poles, the greater the equilibrium of the respective system of interacts, and the fewer material language (language condensed in material signs) is necessary for communication and control – be this communication dialogistic internal (mental dialogue of the individual with himself) or exteriorized.

18. In the physical, mental and social spaces, the more the socialization (exposition to social patterns) is made in the direction of similarity among interactive poles, the more the equilibrium of the system of interacts corresponding to these poles.

19. In the physical, mental and social spaces, the more the socialization is made in the direction of the similarity among interactive poles, the more peace.

20. In the physical, mental and social spaces, in so far as the socialization is made in terms of dissimilarity among interactive poles, in this extent the poles thus socialized will tend towards disequilibrating behavior of the interactive system.

21. In the physical, mental and social spaces, the larger the separation by the idea of dissimilarity, the larger the disagreeableness. And the larger the disagreeableness, the larger the tendency towards conflict (mental conflict: internal conflict, or external conflict: fight).

22. In the physical, mental and social spaces, in the approximation by the idea of similarity, the larger the approximation, the larger the agreeableness, and the larger the agreeableness, the larger the tendency towards cooperation and peace, with larger stability of the integration. And the larger the competition ("pacific fight", process of separation in the mental and social spaces), the larger the instability of the mental and social integration.

23. In the physical, mental and social spaces (justice scientifically defined as the feeling of agreeableness in face of what is thought as ought to be), if a system of interacts is considered essentially (mainly) just by one or more interactive poles (therefore essentially similar to what they accept), such poles experiment a situation of relative and healthful affective suaveness. Contrarily, the oscillating situations of agreeableness and disagreeableness, above all the situations of disagreeableness -- since they are not relatively mild --, favor disequilibrating pathological conditions in the individual and consequently in the concerning interactive system.

5 FINAL REMARKS

Newton (1955, *passim*) and Einstein (1954, *passim*) still represent the most important steps in the way of science.

Both are characterized by science and modesty.

Einstein do not consider Newton a figure of the past, but has him in highest consideration. Let us transcribe Einstein's own words about Newton: "(…) brilliant genius, who determined the course of western thought, research, and practice like no one else before or since.(…) The whole evolution of our ideas about the processes of nature, with which we have been concerned so far, might be regarded as an organic development of Newton's ideas. (…) Who would presume today to decide the question whether the law of causation and the differential law, these ultimate premises of the Newtonian view of

nature, must definitely be abandoned? (…) Certain is that a conviction, akin to religious feeling, of the rationality or intelligibility of the world lies behind all scientific work of a higher order" (EINSTEIN, 1955, p. 253; 261-262).

The present author is happy of humbly trying to continue the tradition of theoretical reduction.

■■■

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