

SYNERGY PANORAMA OF THE DOCTORAL PROCESS

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Abstract

There is a set of problems that emerges before the contemporary organization of the doctoral studies in economic sciences and their resolution is determined by the factors of employing the systemic, cybernetic and synergy approach. Evolution and catastrophic leap are the two paths of contemporary development that are based on the richness of scientific insight. Its grounds are laid in the field of doctoral studies as the starting phase of each science. The object of this piece of research is the doctoral process, while its research topic is the latter's synergy panorama. A basic assumption held is that the synergistic reflection should be interpreted as the dictatorship of the integrity of the examined process. In its standard form, the interrelated behaviour of self-organization is interpreted in terms of hierarchization (obedience), parameters of order (order and chaos), cyclical reason (obligatory feedback) that are all targeted at establishing a natural order in doctoral studies – self-sufficiency with the presumption of growth.

Keywords: doctoral studies, synergy, integrity, self-organization, evolution, parameters of order, self-sufficiency

JEL: A20, A29, B41

Introduction

In scientific activity there is created and employed a set of different general approaches (ways of expedient systemic response, ways of resolving a specific problem in taking account of the specific conditions of its existence, the behaviour tactics under extreme conditions, the prophylactics of the prevention of negative consequences, among other). Fundamental relevance among them has what the Austrian biologist Ludwig von Bertalanffy (1901 – 1972) offered in 1937 on the world book market as *General System Theory* (in which the examined reality is interpreted as a system first as status – elements, relations, interactions and sustainable behaviour, and second as dynamics – emergence, functioning, development, improvement and perfection and demise), which is the functional paradigm of the development of each price of research. It would be unfair not to make mention of the comprehensive (2,261 pages) piece of research (*The Economic System. A Study of the Systemic Approach in Economics*) by professor Kamen Mirkovich (2008, 2009), a longstanding faculty member and rector of the

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University of National and World Economy. It is from the foundational systemic aspects that stems systemic analysis – goal setting, problem identification, decision making with regard to perfection, equilibrium maintenance, etc. During the different stages in the development of this approach, some of its separate modifications prevail. From the 1950s until the 1970s dominant were the cybernetic approach (Norbert Wiener – 1894 – 1964) and the information approach (Claude Shannon – 1916 – 2001), while at present the dominance has been increasingly reaffirmed of the synergistic manner of universal reasoning and management of processes, phenomena and things.

The aim of this piece of research is to expose the major aspects of the synergy picture of the contemporary doctoral process, and on this basis to offer some opportunities for its improvement and perfection.

The basic assumption in the analysis is that doctoral studies have been long ignored as the field for the growth and promotion of the nation's elite, which is in line with the deeply entrenched retrograde understanding that doctoral studies is solely the doctoral student's prerogative. Yet the synergistic interpretation has proven the opening up of serious opportunities in case there is a good will.

The analysis is based on the author's summed up observations and on the participation in the doctoral studies in economic sciences.

The nature and mechanism of synergism

In the Dictionary of Borrowings in the Bulgarian Language (Dictionary, 1982, p. 783) the word *synerg* is presented as a Greek word that means *collaborator* or associate. In anatomy synergist pertains to an organ that operates in the same direction with other organs. In this context synergism means together with... in the performance of some work or action, compatibility plus action (joint action), well coordinated and targeted action, etc., on the axiomatic pre-condition that the property of the organized whole is bigger than the sum of the properties of the elements it is made of.

Synergy as a configuration of processes has been intensely developed since the early 1980s. It represents the core of the science of synergetics, the founders of which were Hermann Haken, Ilya Prigogine, Sergey Kyurdumov, Vladimir Bransky, Murray Gell-Mann, Richard Slansky, among others. In Bulgarian scientific thought these were Dimitar Dimitrov, Lyuben Dessev, Ivan Tsanov, etc. Four scientific schools have been established in synergetics: German, Russian, Belgian and American (Tsanov, 2018, pp. 256-286).

It is on this basis that a number of aspects may be formulated in the definition of synergetics as the science explaining the formation and self-organization of patterns and structures in open systems; unstable conditions (preceding the

catastrophe) and their further evolution; transitions and interactions between chaos and order, etc.

In terms of methodology, this science focuses its subject matter on the newly emerging processes and assumes as a given thing non-linearity, disequilibrium and instability. Hence under external or internal impact, the entire system is subject to change and is transformed into a new coordinated state (enjoying relative equilibrium and stability).

In the world of science synergetics is also recognized as global evolutionism, the theory of evolution, the theory of dissipative (diverting, destructive, turbulent, system of equilibrium and chaos, part of the self-organizing system; transition from homogeneous and symmetric state towards an non-homogeneous, uneven and non-linear state that carries the charge of an independent transition from order to chaos and vice versa – these are all aspects of synergy) structures, the theory of dynamic chaos, co-evolution between man and nature, etc. Moreover, what is now being transparently explored is the issues of the synergy paradigm (in which knowledge is not segmented into fragments but is instead uniformly created and used).

The synergistic way of a system's functioning and development may be described and represented through different aspects and links. In this regard, there follows a summary of a number of imperative assumptions that perform the function of a specific type of code for joint action.

a) Synergetics encompasses the universal process of **self-organization** (a development that is based on the evolution of order): the natural manner of functioning of every open system and of maintaining its equilibrium so that it should perform its immanent functions.

b) There is **more than one stable and sustainable regime of behaviour** of the examined system, which creates the opportunities for a rational choice of an alternative trajectory of development.

c) It is necessary that a clear distinction should be made between the system-forming characteristics of order (the parameters of order; a state that every systems tries to achieve so that it functions in its natural order; hierarchization, etc.) and system-complementary (maintaining) forms, through the activities (functioning) of which the process of self-organization is carried out.

d) By taking account of the **determining** (absolute necessity and predetermination in actions) and **non-determining** (absolute chance, wilful actions) **circumstances**, the degree of freedom in the subjective factor's behaviour, which is largely subjected to subjectivizing the objective and objectivizing the subjective, is determined.

e) There are three **constitutive elements** of self-organization: **the parameters of order /chaos**, hierarchy and non-hierarchy (the principle of obedience) in the system and compliance with the obligatory feedback (cyclical reason).

f) Self-organization arises on the basis of the **mutual transition between order and chaos that determines the non-linear relations and openness**.

g) Every **new formation is not a simple summation of its constituent components** but is instead a system with other features, including the achieved higher (synergetic) **level of effect** and a new quality of collective behaviour of its elements – **a new behaviour**.

h) The sources of synergistic development and transition are as follows: **the accidental nature of unpredicted factors** (risk and indetermination), which inevitably conditions hesitant behaviour (fluctuation caused by known or unknown reasons) and hence – enhanced disequilibrium, the symptoms of destructive forces; **irreversibility of the direction of functioning** as a basic necessity for the system to exist; **instability**, problems related to functioning (self-complication), threat for the system's destruction (whether overall or partial), spontaneous creation of new structural anti-chaos elements and of avantgarde properties.

i) The system's evolution passes through **three forms: strong disequilibrium** at the macroeconomic level, and as a result there arises the need for a systemic transition; **disequilibrium** – a modal transition, change; **spontaneous difficulty** – omissions, reorganizations, modernization, reforms, etc.

j) The synergistic element in the chaos-order relation contains the following **features** (Tsanov, 2018, p. 291): chaos is primary, whereas order is secondary; there is order in chaos; order is equal to a symmetric opportunity, whereas chaos is equal to an asymmetrical necessary chance; chaos and order are immanently and indivisibly connected; chaos not only destroys but also *creates*; the chaos-order relation is the key to the synergistic interpretation of management; the basis of the chaos-order relation are conflicts, which exposes the insufficient connectedness between goals and the ways to achieve the goals – **polarization** (unity with regard to goals but lack of unity with regard to achieving them), **clash** (complete discrepancy between goals and the ways to achieve them) and **antagonism** (a high degree of conflict-related tension between goals and the ways to achieve them).

k) In their synergistic functioning, the systems are not examined in parallel (next to each other), nor vertically (one above the other), but mostly in a mixed manner (diagonally) – **one through the other**. This exposes the deep meaning of welding together the separate systems into an overall dynamic set of assembling and dissolution.

This brief overview shows that the synergy approach would be an important tool for the **creation and maintenance of the integrity of the doctoral process**, that is, it will provide **for the doctoral student's alignment within the academic environment, the integrity of the doctoral thesis and the incorruptibility of research behaviour**. Central to this process is the reproductive concept for consistent doctoral actions, used methods and achieved results on the one hand, and for values, principles and expectations, on the other. In this context it becomes evident that the first group of elements pertains to the technology of work, while the second – to the moral and ethical aspects of this algorithm. The interpreted aspects mutually determine and complement each other. In operational terms this suggests that unity should be achieved for the sake of the creation of doctoral wellbeing that transpires as actions taken to achieve common goals and perform joint tasks and ensure a coordinated connectedness between the separate elements and aspects of the process of doctoral studies.

The above would be utopia, unless every attempt to specify the integrity of the doctoral process through achieving integrity were not based on three pillars.

a) **The meaning (mission)** of doctoral studies is to establish the foundations of a **complete professional researcher** who has mastered the art of seeking the truth hidden in things.

This cannot possibly be materialized unless the following is simultaneously taken into account: **the genetic predisposition towards research** of the participants in this process (what we tend to define as *talent*, though we rarely *respect* it during the admission to doctoral studies), **the effects of the doctoral cycle** (which indisputably depend on the doctoral student's pampering by their scientific supervisor and the other members of the training unit and by society at large) and **the generated values** (the assessment of which would be invariably fairer if reviews were more critical rather than easily and readily dismissing this practice).

b) **Doctoral training** (determined by syllabuses and programs, lecturers, technical equipment, attitudes and achieved results) **and doctoral research creativity** (determined by the author's research ability and passion, the scientific supervisor, environment, motivation and generated contributions) are the two **essential highways in the analyzed process** in which domination should be sought both internally and externally of order and harmony over utter chaos.

c) **The integrity of the doctoral process is realized through:** First, its **legal regulation**, second, its reliable **control through the permanent observation and accreditation** by the National Evaluation and Accreditation Agency, third, through the adopted (by the institutions that train doctoral students) **internal regulations** of this process, fourth, the doctoral students' **annual appraisal** (which is at times a formal act), fifth, maintaining coordinated **disciplining**

actions and relationships between the doctoral student and the scientific supervisor, etc.

All of the above exposes synergism as a powerful tool to achieve a stable integrity of the doctoral process in higher education and research institutions: both in terms of training and the doctoral dissertation. This is a formal division. The boundaries in the work of these two sides overlap. This is why this piece of research focuses on the doctoral thesis while also presenting the implications for the training process. Another perspective is also possible.

Obviously synergism ensures a new perspective from which is examined the systemic functioning of complicated structures such as nature, society and the universe. Every underevaluation of the created chaos both terms of microcosm or macrocosm may turn out to have negative consequences. At times some minor failures may have a very strong impact (a minor influence may produce a serious result), at times big problems may have an insignificant impact (a major influence may produce a weak result) in a system's functioning. It is all a matter of making the right judgment, positioning the influencing elements (core or periphery), the presence/absence of defense, etc. Furthermore it is accompanied by a transition from chaos to order and vice versa.

In terms of self-organization, the doctoral research is a problematic field of powerful synergistic storms, thunderbolt and, of course, much sun. There is no doubt that juxtaposing the factual state (including the chaos in it) and the standard state (the pursued natural order) in the doctoral dissertation may precipitate useful conclusions for the changes needed in the doctoral student's behaviour.

This is the aim of the next pages.

Synergy reflections in the doctoral process: the dictatorship of integrity

In institutional terms the doctoral process has two aspects: factual (what is it?) and standard (what is it aimed at?).

The factual aspect forms the real status, as it is a specific history of the *health* of the doctoral reproduction, whereas the standard one characterizes the pattern of the *healthy doctoral process*.

In the synergistic context the factual status of the doctoral state is determined by the available antipodal forces (determinism and indeterminism, hierarchism and de- hierarchism, symmetry and asymmetry, order and chaos) and conflicts (lack of unity between aims and the ways for achieving the aims), while the forms in which it takes shape (status integrity) are the required components for energy maintenance (potence – might, holism – integrity and functionality – utility) and the *field* aspects (technical, technological, managerial, political, social, natural, global, euristic, psycho-physiological, etc).

The standard status is determined by two factors:

a) Self-organization through chaos and order: giving rise to or eliminating the factors of chaos and order, equal action between these two antipodes.

b) The natural progress of order: the choice of target coordinates between the possible and the sufficient, the perfect and the maximal; transitions and strategic transformations in the doctoral dissertation process (the relativity between its elements) and coherent behaviour/self-organization (the parameters of order, the principles of obedience and cyclical reasons) determine the standard state of the doctoral dissertation process.

The synergy cycle is described in figure 1.

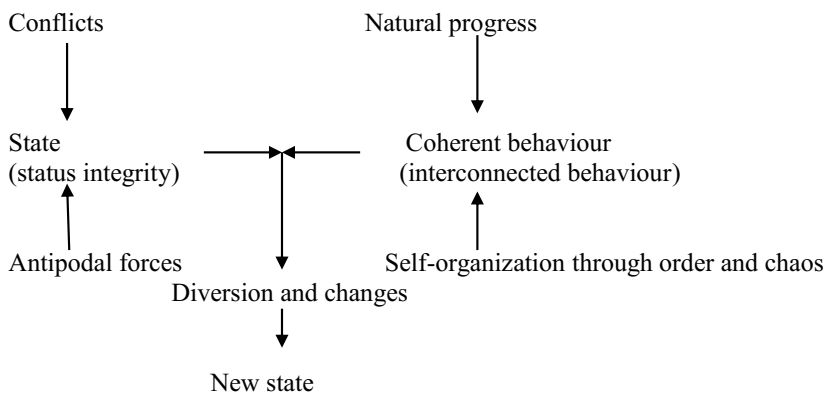


Figure 1: Synergy cycle

On the basis of this cycle, the succession of the future presentation of the synergy panorama of the doctoral process has been arrived at.

Status integrity

The status integrity contains the required components for the maintenance of the synergy and the field aspects of the doctoral process.

The required components for synergy maintenance are potential, integrity and utility-driven functionality.

The potential characterizes the feeling for might in the doctoral process organization. This stage can be presented in two directions.

- the school of higher education should create the necessary conditions for the doctoral process organization: rooms, laboratories, libraries, administrative services, communal services, etc.
- the doctoral student and their scientific supervisor should have a zest toward creativity for the doctoral dissertation: high quality of the methodological training and readiness for its increase, active motivation for work, the

doctoral student's high-quality basic training in the research topic, high social status of the doctoral graduates, etc.

The integrity (holism) in the doctoral activities comprises the following:

- high organizational culture of the doctoral process: labour and academic discipline (lack of corruption); responsibility of the training unit and the scientific supervisor; reliable internal regulatory framework of the doctoral process, etc.
- the pursuit of an active academic policy for the development of the doctoral process: advertising, the introduction of the basics of the art of research in the academic training at the bachelor's and master's degree level, award of scholarships by the school of higher education to the excellent performing doctoral students, the paid provision of doctoral research for application in practice, among other.

Utility-driven functionality of the doctoral product takes shape in the following:

- ensuring the creation of research knowledge and skills in the trainees;
- the development of a doctoral dissertation in advance upon the request from practice;
- the introduction of a doctoral internship in the possible units (that have requested and/or applied the doctoral product);
- assisting those that have defended their doctoral dissertation in their placement on the labour market;
- publishing the results of the doctoral process, etc.

The *field* aspects of the doctoral process are as follows:

- a) content: euristic, technical, technological, economic, institutional, natural and other aspects of this process;
- b) the interpretation of the research field in its different possible aspects and relations;
- c) the outlining of the contextual priorities of the research and the exposition, etc.

The conflict nature of the doctoral process

The conflict nature is immanent to the doctoral process. It stands out most markedly during the dissertation cycle.

The ways to achieve the dissertation aim are related to resolving a concrete problem in the following order and succession:

- problem examination: state, factors, development, trends, expected results, etc;
- developing assumptions (hypotheses) for problem resolution;
- testing the reliability of the offered solutions: adequacy of the situation, criteria for the selection of a solution, justifying the made choice;
- justifying the ways of applying the solutions;

- the acknowledgment of expected post-problems arising during application and the mechanisms to overcome them, etc.
- The lack of unity between the ways of achieving the research aim is expressed in the following:
- the different quality of the used research ways, which creates obstacles to (offsets) the consistent process of accumulating the target effect;
- insufficient control over the ways of achieving the aim in the context of their application and the possible defects produced on this basis (parastic eating up of the effect);
- the insufficiently deep knowledge of the specific theory and practice of the interpreted ways of achieving the aim, etc.

The lack of unity between the aims (attractors) in the doctoral dissertation stems from the following:

- the different targets of the aims and the separate levels in the hierarchy (lack of coordination between the research aims and the exposition aims, the aims at the separate stages and the basic aim of doctoral dissertation, etc);
- discrepancy and contradiction between aims and the tasks related to their achievement, etc.

The conflicts between aims and their achievement are manifested in three forms.

a) **Polarization** which distorts the overall structure by: the different analysis quality in the separate research sections, shifting the center of the performed analysis, lack of harmony in the made conclusions, etc.

b) **Clash** through which the meaning of the doctoral dissertation is radically disrupted: the emergence of disequilibrium trends in the doctoral dissertation between title and structure, aims and tasks, tasks and contributions, hypotheses and results, etc.

c) **Anatgonism** – tensions in the doctoral process between: the doctoral student and the scientific supervisor, the doctoral student and the training unit, the doctoral student and the reviewers, contradictions between separate sections of the doctoral dissertation.

There is no doubt that as a result of all of the aforementioned aspects, the **stress elements** (confusion) are created and expanded in the doctoral research behavior. In this function they tend to act as activators towards the creation of a high-quality doctoral product, whether it be a doctoral dissertation or the buildup of research competence (knowledge, experience and relationships).

Antipodal forces

These forces get connected with the trajectory of the doctoral process (order) and the indeterminate doctoral trajectory (chaos).

The trajectory of the doctoral process (determinants, order) is manifested in the following set of forms:

- obligatory common requirements for the admission to doctoral studies: graduation from a master's degree education, participation in the ranking by grades from the entrance exam (or high quality of the submitted for enrollment variant of the doctoral dissertation in the case of individual doctoral studies), successful passing of doctoral studies' exams, the writing and the positive assessment of the doctoral dissertation, successful defense, etc.
- The following is also invariably necessary: unconditional scientific guidance; compliance with the requirements in the paradigm of the doctoral research; the doctoral student's behaviour should be in line with the regulatory requirements for the organization of the doctoral studies, etc.

The indeterminate doctoral trajectory (chaos) is manifested in the following:

- Absolute chance: the enrollment of a doctoral applicant who is insufficiently prepared, apathy on the part of the scientific supervisor, undisciplined doctoral student, force majeure circumstances (unpredicted chaos), the doctoral student's restricted freedom of creativity, etc;
- Insufficient compliance with the absolute predetermination of the organization of the actions taken during the doctoral studies: there are no strict regulations of the third level of higher education in the training institution; the doctoral student fails to meet the requirements for doctoral studies; lack of sufficiently precise assessment of the doctoral studies and taking constructive measures for its improvement, etc.

Standard status

This status pertains to the orientation of the training and doctoral process towards the nature of the activities in society based on specific rules and procedures. It includes the following: interconnected behaviour of self-organization; natural progress and/or through chaos and order.

Interconnected behaviour of self-organization

It contains fragments of self-organization, parameters of order, principles of obedience and cyclical reasons.

The fragments of self-organization pertain to the academic autonomy of the training units with regard to the organization of the doctoral process:

- schools of higher education enjoy the creative freedom to organize the doctoral process: the selection of doctoral students, the choice of topic

and title of the doctoral dissertation, the choice of scientific supervisor, the choice of scientific panel, etc;

- the freedom to organize at their discretion the regime of the doctoral studies: shortening or extension of the period within the regulatory limits, change in the status of the doctoral studies (full-time – part-time – individual – distance), change of the scientific supervisor, etc;
- the opportunities to boost the doctoral student's activity and motivation: scholarships, awards, benefits from practice, etc;
- periodical assessment of the progress of the doctoral studies and adopting guidelines for its improvement: amendments to the internal regulatory framework, improved structural and administrative ties, etc.
- organizing the training of current or would-be scientific supervisors;
- organizing scientific forums on doctoral problems;
- setting up and operating a doctoral school, etc.

The parameters of order are related to:

- regulatory framework and its maintenance in an active form: permanent improvement and complete enforcement;
- high academic culture in the organization and operation of the doctoral process;
- doctoral students' freedom of creativity;
- reliable training and technical provision of the doctoral process;
- an elaborated and implemented program for the development of the doctoral studies;
- intensive promotion of the activities and the results of the doctoral studies;
- strict control over the *hygiene* of the relationship between doctoral student-scientific supervisor – training unit and attitude of respect towards previous investigations into the research topic, etc.

The following requirements are basic with regard to coordinating (**principles of obedience**) in the doctoral process:

- separation of the doctoral studies as an independent unit with: administration, training, consulting, research and publications, organization of the internal and final defense, etc;
- coordination between the training in the doctoral studies and the one in the other qualification and education levels of higher education: the bachelor's degree and the master's degree;
- strict compliance with the requirements for the organization of the doctoral studies;
- performing permanent systemic control over the doctoral process, etc.

There are several manifestations of the **cyclical reasons**:

- the mandatory development and application of indicators (criteria and measurement) and approaches for the operational recognition of the state of the doctoral studies;
- timely elimination of the reasons for drawbacks in the organization of the doctoral studies;
- taking preventive measures with regard to the circumstances that can possibly give rise to chaos in the doctoral studies;
- planning the activities under the doctoral studies, etc.

Natural progress

This heading encompasses the manifestations of the wording *possible and actual*, *perfect and maximal*, and *maintaining the relativity between the elements of the doctoral dissertation process*.

In realistic terms, the ***possible and actual*** dilemma contains as follows:

- successful passing of the exams from the doctoral syllabus;
- choice of a research topic that is possible for development depending on the doctoral student's preparation and attitude;
- taking advantage of the degree of freedom admissible within the regulatory framework: absolute (creative search) and relative (search within the bounds of reality, not fantasies);
- sufficiency in the doctoral research process: Volume of the doctoral dissertation; comprehensiveness of the argumentation; comprehensiveness of the information sources и and reliable information in them; comprehensiveness of the conclusions; completeness of the author's intention; comprehensiveness of the main idea; time limits of doctoral studies, etc.
- Objective assessment of the doctoral dissertation by the exam panel: topicality, needs justification, assessed options for impact of the achieved result, well implemented methodology and methods, well structured doctoral dissertation, contribution justification, options for experimentation and practical application, identified limitations of the scope, etc.

Perfect and maximal pertains to the doctoral student's aspirations to reach a set ideal.

These aspirations are related to the following:

- absolutely strict discipline in training and the drafting of the doctoral dissertation;
- detailed knowledge of the world literature and experience in the research topic;
- a number of publications that the doctoral student has made in prestigious world publishing houses and research journals;

- expedience of the costs made for the experimentation of the author's ideas;
- strong intellectual recognition of the doctoral student on the part of national and world institutions (patents, licences, awards, publications, etc), among other.

Maintaining the relativity between the elements of the doctoral dissertation process involves the following:

- **operational hesitations:** elimination of microscopic problems – errors made in the used information, omissions in the generated conclusions, inconsistency in the defended positions, errors made in the intertextual communication of the doctoral dissertation, style-related mistakes, etc.
- **Strategic changes:** changes in the title and structure of the research and exposition, achieving relativity between the separate sections of the doctoral dissertation, upgrading of knowledge in the examined problem, change of the scientific supervisor, discrepancy between the abstract of the dissertation and the doctoral dissertation itself, “devised” contributions, etc.

Self-organization through chaos and order

It is manifested in the following:

- Cyclical manifestations, such as mandatory feedback, arise from both internal and external pressure on the doctoral reproduction and provide the basis for maintaining rationality: coordination during the doctoral processes; synchronization between training and research; joint action (synergy and co-evolution);
- order (the preservation of integrity and equilibrium) is achieved through conscious activity on the part of the stakeholders in the doctoral process, performed in compliance with the regulatory framework (symmetry, equilibrium, development, progress);
- chaos is the natural state of the emergence of problems (asymmetry) and their resolution with a view to the normal functioning and development of the doctoral process.

Apparently synergy is made of order and chaos, treated in a specific combination. From one perspective, order is the form of the existence of life, from another – as a status quo it is a conservative element of growth, while as a planned change, it is development. The same holds for chaos: From one perspective it is a litmus, acknowledged as a *call for expansion* under the pressure exerted by external forces, while from another perspective, it is destruction, regressive evolution, which, unless it is sufficiently rationally interpreted, is another prerequisite for progress and movement ahead. Both order and chaos are attractors (magnets) of growth, while being an obstacle to progress at the same time. The question is that the first should presumably prevail over the second.

Chaos is related to the **major identified omissions in the doctoral process**. They can be grouped under several headings.

a) **Training**

- lack of preliminary knowledge by the doctoral student about the mechanisms of scientific creativity;
- insufficient utility of the training scope: domination of theory over technologies and experience;
- downplaying by the doctoral students of training procedures that construct the analytical language of research communication;
- excessive liberalization of the exam procedures of the doctoral students, etc.

b) **Creativity with regard to the doctoral dissertation**

As practice shows (Lulanski, 2017, pp. 361-363; 2018a, pp. 156-161), in the field of doctoral creativity with regard to economic sciences, there have been a number of entrenched omissions for a long time (table 1).

Table 1: Identified omissions in the creative doctoral dissertation

№	Positioning of omissions	Content of the made mistakes
1	2	3
1.	Organization of the massive information	
		1. Underestimating the huge importance of the information resource to the doctoral dissertation in the direction of achieving exhaustiveness, focus and expanding/limiting the title, choice of an appropriate structure of the exposition, “freshness” of the sources used (what has been dominating in the past 10-15 years), representation of a retrospective panorama of the subject, etc.
		2. Seeking and quoting information sources only in the research part , not in the whole study and exposition.
		3. Lack of specialization (on the chosen focus of the analysis) of the information used organized through an indicator framework, as part of the methodology of the research dissertation discourse.
		4. Insufficient attention paid to the conceptualization of provided information vis-à-vis the mediator aspects of the research (research topic, title, aim, hypotheses apparatus, tasks and structure of the exposition) and weaving/entangling the information into the organization of the text to construct a reliable intertextual communication of the exposition.

Continued

1	2	3
		5. Lack of knowledge of the techniques of transition in the dissertation from facts to theory and from theory to facts/signs (features)
		6. The large-scale compensation of not knowing foreign languages through using translated literature (secondary information) and even in the cases of interpreting another author's viewpoint, which is the central focus of the research (for instance in the doctoral dissertations on the history of economic thought or on economic history)
		7. Not using all possible accessible sources to obtain adequate information (questionnaires, interviews, personal observations, metric or non-metric data etc.)
		8. The doctoral student not being prepared to efficiently seek and initially process the necessary information resources, which would guarantee a productive analysis etc.
2.	Designing the doctoral dissertation research and exposition	
		1. Insufficient knowledge of the anatomy and physiology of the research: core, analytical functions, types of theoretical thinking, stages, phases etc.
		2. The chosen structure of the exposition does not fully correspond to the title and does not sufficiently comply with the aim, the hypotheses apparatus and the tasks of the dissertation project.
		3. The doctoral student has confused the relation between research and exposition: at some parts the author first finishes their research and after that writes the whole text (of a chapter or point) and at other places they have simultaneously made the research and written the text, which gives rise to a lot of omissions and differences in presenting the results.
		4. The presented aspects on the individual chapters are incomplete and they lack answers to all control questions.
		5. The existing difference between aim and tasks is not always exposed, and the latter are not differentiated and correctly rationalized as routine-organizational and aim-heuristic.
		6. The analysis (and the exposition respectively) do not sufficiently correspond to the introduction, the hypotheses apparatus and the conclusion.

Continued

1	2	3
		7. The doctoral dissertation is not based on the author’s doctoral original experiment , which deprives the text from empirical flair and depletes from its quality.
		8. The doctoral student does not a priori realize the type of the conducted research (theoretical-cognitive, methodological or mixed) and on this basis allows inadvertent structural discrepancies.
		9. The process of writing a doctoral dissertation is not in compliance with the general functional algorithm of the research and exposition, which has given rise to serious discrepancies, deficit of information, underestimating elements , etc.
3.	Constructing the title of the doctoral dissertation	
		1. Some doctoral students do not make a distinction between topic and title and they often mix reason and consequence, sometimes the title is written in two sentences (which means two centers) etc. when constructing the latter.
		2. The analysis is positioned not according to the focus of the research topic, but according to the research topic (sometimes even according to the research object) , and as a result the focus of the research is blurred and it is deprived of the so necessary depth (it remains <i>superficial</i>)
		3. At times a precise distinction is not made between the research problem, the research object, task, research topic and focus.
		4. In the title an ambiguity is allowed in interpreting its syntax, sometimes it is unnecessarily complicated (the the limitataions of the scope is not productively used), in other cases a journalistic approach transpires, while in third cases it is extremely ambitious and is beyond the doctoral student’s abilities, in fourth cases it suffers from deliberate indeterminacy (for instance, “For...”, “On some questions regarding...”, “the problems of...” etc.)
		5. The title is not the result of the doctoral student’s active consultations with their scientific supervisor, colleagues, lecturers in the field of the doctoral dissertation, specialists from the practice, consultants, etc.
4.	Devising and testing the hypotheses apparatus	

Continued

1	2	3
		<p>1. Insufficient rationalization of the hypotheses apparatus as a resource of knowledge: theory and cognition, respectively as a consequence – innovation in the form of a discovery, invention and innovation.</p>
		<p>2. Underestimated aspects of constructing the content of the hypotheses apparatus: descriptive (state of the focus of the research topic in terms of problems in theory and practice), explanatory (causal links and dependencies in this focus), and predictive (prediction about the ways to harmonize/recover the research topic by making changes to the examined aspect).</p>
		<p>3. Usually what the practice of writing a doctoral dissertation fails to do is the interpretation of the reproduction of the new knowledge as a hypothetical necessity (devising a hypotheses apparatus in the doctoral dissertation project), hypothetical reality (checking the suitability of this apparatus), and the proved new knowledge (commonly acknowledged and redressing the existing fake or pseudo scientific knowledge).</p>
		<p>4. The opportunities to fully test the hypotheses apparatus are not used: correspondence – testing its compliance with facts from reality; coherence – making reference to expert assumptions; arguments made not on the basis of documents in force; author’s official documents, standards etc.; including the elements of the hypotheses apparatus in expert assessments etc.</p>
		<p>5. Frequent cases of manipulation while highlighting and checking the hypotheses apparatus: achieving/reporting of confirmation through adapted data; adapting the hypotheses apparatus to identified facts; there are also doctoral dissertations (even those that have been defended) with an ephemeral and loose hypotheses apparatus, and even lacking a clearly expressed one etc.</p>
		<p>6. Sometimes in a historical plan facts are presented which are taken from outside the context of the initial analysis, but fully confirm the statements of the hypotheses apparatus (intentional omission of the “inconvenient” information), data are presented without an indicated source etc.)</p>
5.	Devising and using an indicatory framework	

Continued

1	2	3
		1. The doctoral student, as a rule, does not assign an independent place (a paragraph or a chapter) to develop the acknowledgment of the idea of the doctoral dissertation, i.e. there is an underestimation of this important question, which precipitates consequent problems in the research.
		2. A distinction is not drawn , to the necessary extent, between metric (statistical and institutional) and non-metric (empirically recognized) information. These varieties are usually invariably present in the doctoral dissertation and mutually complement each other.
		3. When <i>obtaining</i> non-metric information, serious mistakes are made , first with the empirical derivation of the elements of the research topic under investigation, second , with devising the questionnaire for a quantitative recognition of these elements, third , with organizing the filling in of the questionnaire (expert, sociological or other survey), fourth , with the operationalization of the answers as indicators and measurements of the recognized elements and their analysis.
		4. The cases of including the elements in the hypotheses apparatus in the indicatory system are rare, though this is extremely important and useful.
6.	Definition of the conceptual apparatus	
		1. The doctoral students do not know well enough the process of conceptual interpretation (also the recognition of concepts).
		2. A clear distinctions is not always made between a category and a concept, a term and word.
		3. The doctoral student is not always well-grounded in the tree (the thematic richness) of the concept : features (properties and relations), content of the performed functions (aim, integrity, adaptation etc.), aspects of the relations (embodied in the concept) etc.
		4. Seeking and finding definitions (recognizable contextual self-sufficiency), of the studied concept as a variety of the officially perceived standard formulation is far from the doctoral student's frame of thought .

Continued

1	2	3
		5. In a lot of cases chapter one of the doctoral dissertation lacks clarification of the used absolutes (concepts), which consequently creates serious mistakes: a lot of different concepts are used for one and the same interpreted object; concepts from different paradigmatic formations are used; the synonymic meanings of the typological diversity of the epistemic expressions are not taken into account, etc.
7.	Intertextual communication	
		1. A real deficit is present: rare are the cases in which a doctoral student's high culture in intertextual communication is found: that is, this aspect is largely perceived as a periphery, while it is the <i>apparel</i> of all doctoral dissertation.
		2. Sometimes the bibliographical reference in the text is done in different ways, standards, methods etc., which brings about chaos in the manuscript.
		3. The typical direct and indirect forms of reference in the intertextual communication are not known , and frequently the requirements of different "geographies" are applied: sub-textual (footnote), notes in the text (internal textual), notes after the main text (endnote), reference made on the basis of the final bibliographical description of the used information sources etc.
		4. There is a discrepancy between the ways of making reference and the bibliographic description.
		5. Internet references appear usually without a whole writing of the source and indicating the date of access to the global web , which makes them insufficiently precise.
		6. Due attention is not paid to the precise and uniform description of the sources of the used charts, tables, information included in the text etc.
		7. It is forgotten that the source of the used paraphrase should also be mentioned etc.
8.	Screening of the doctoral dissertation	
		1. In being quick to meet the deadline of the doctoral degree, the doctoral student accumulates in the dissertation a lot of relational imperfections , which they should take account of, since they undermine the quality of the research. This is an aspect that is totally downplayed not only by the doctoral students, but also by their scientific supervisors.

Continued

1	2	3
		2. The doctoral students not always know and comply their research and exposition with the organically necessary correspondences-axioms of the functionality of the research in the text, as a unified whole and completed system.
		3. The reviews of the doctoral dissertations usually point to the following major incongruities : Between content and title; Aim and tasks; Hypotheses apparatus and contributions; contributions and tasks; disproportion in the volumes of the individual sections of the research; ambitions to have made contributions and the presence of similar solutions in the literature etc.
9.	Abstract of the doctoral dissertation	
		1. The mismatch between the content of the abstract of the doctoral dissertation and the text of the doctoral dissertation is very frequent, and what is extremely unacceptable is including in the content of the abstract elements which are not included in the dissertation.
		2. A double-layer form of referencing is used simultaneously: abstract and extract , which makes the text rough and heterogeneous.
		3. The presentation of the ideas of the doctoral dissertation is incomplete , the reason for which is the lack of short summaries of each chapter in the doctoral dissertation.
		4. Sometimes a blurred form of expression is achieved and on this basis an unnecessarily extended volume of the abstract of the doctoral dissertation is produced and also an eclectic presentation of parts of the doctoral dissertation without observing the logical connection between the two.
		5. The content lacks normatively regulated components of the abstract of the doctoral dissertation , for instance, limitations of the analysis, methods used, provision of information etc.
		6. The abstract of the doctoral dissertation is published without a precise scientific and stylistic review , without “an external viewpoint” – expert review etc.

Continued

1	2	3
10.	Presentation and defense	
		1. The abstract in the presentation does not fully present the content and the basic results of the doctoral dissertation.
		2. The multimedia form of the abstract is ignored at the expense of the narrative, and as a result tradition of presenting the doctoral dissertation is overestimated, while the possible contemporary forms are ignored.
		3. The basic content of the summary is formed mainly as part of the text of the abstract of the doctoral dissertation (even of the doctoral dissertation itself), and this is seen as a sign of the doctoral student's low culture of presentation.
		4. There is an inappropriate choice of the aspects to be presented, the content of the abstract contains peripheral parts of the research and is far from what is essential in the doctoral dissertation.
		5. When answering the questions of the people present at the defense, the doctoral student fails to answer some, which makes a negative impression and allows for making incorrect assumptions about the quality of the defended doctoral dissertation and the preparedness of its author.
		6. The doctoral student reads word for word the abstract as a report, speaks hesitantly , demonstrates the lack of knowledge of essential aspects of the doctoral dissertation, shows no respect for other people's viewpoint etc.

The 59 negative aspects highlighted in the table above, which can justifiably be referred to as traditional chaos, cannot but impress even the unbiased reader. What else do these aspects pertain to other than fractals after the point of bifurcation of existing problems in the Bulgarian doctoral system in economic sciences?

What are the implications and what should be done?

- The omissions should be explored in detail and at different forums (universities, faculties, institutes, departments, etc.), and action guidelines with a view to their gradual elimination should be outlined – the inertia typical of the doctoral process should be overcome on time rather than be let to deepen.
- Programs and action strategies should be elaborated with the overall responsibility and understanding that in the doctoral process, the foundations are laid for the future economic science and practice.
- Training in the doctoral studies should necessarily comprise relevant lectures and practice-oriented materials and actions so that the entrenched problems in the doctoral reproduction be overcome.

- What should be stimulated is research and scientific papers, seminars, conferences, round tables, among other that are related to the organization and management of the doctoral process in a dynamically changing environment.
- The role and responsibility should be increased of the scientific supervisors (Lulanski, 2018b) with regard to creating highly qualified young researchers in the field of economic sciences.

There are only guidelines. Every training unit for doctoral studies should develop their plans for the improvement and perfection of the doctoral process.

d) **Conundrums in creating titles of the doctoral dissertation**

The title (Dacheva, 2019) is defined as “the totality of language units that may be formulated before the writing of a text is initiated that can possibly describe the text so that the content is exposed and the readership is attracted”. In the past 40-50 years, the theory of creating titles has been elaborated in the science of *titrologie*. Its subject matter is the systematic examination of the title and headlines and the presentation of a methodology for creating a title of a text – be it literary, scientific, journalistic, etc.

Titrologie is a relatively new scientific discipline. It was Harry Levin (1977) who first used the term in his study entitled *The Title in the Literary Genre*. Five years later Leo Hoek (1982) legitimized the systematic exploration of titles in his book *La marque du titre: Dispositifs sémiotiques d'une pratique textuelle*.

In Bulgaria the first researcher who contributed to the study of paratexts is Tsvetan Rakyovski (1997). Another consistent researcher in this field is Kleo Protohristova (1990, 1996, 2014).

In the context of the difficulties encountered in creating titles, which are part and parcel of the synergy discourse, two circumstances should be taken into consideration.

If it is assumed that the *birth name* of the doctoral dissertation is indicative of its quality as well, then it worth making a screening of this process of title creation. The established flaws and drawbacks may be summed up as omissions in the process, in particular of creating the titles of doctoral dissertations (Lulanski, 2020, pp. 115-134).

To this effect 206 dissertation titles have been examined (available in the register of the defended doctoral dissertations in economic sciences in the period 2018-2020). The established average number of words per title is 7.13, which falls within the range of the silent consent among experts in economic methodology of an average number of around 7 words for the titles of such research. This is wonderful, yet it does not suggest that other decisions in this regard can be made as long as they are well justified: in any case the doctoral student should beware writing too short or otherwise too expanded (ornate) titles.

Three of the analyzed titles are with the shortest wording (of 3 words): *Marketing of Wine in Bulgaria*, *Essence of Court Practice* and *Cognitive Distortions in Planning*.

Two of the analyzed titles are with the lengthiest wording (of 13 words): *Bulgaria's Social Policy at the start of the 21 Century in the Deinstitutionalization of Children With No Parental Care: Analysis and Assessment* and *The President of the Republic of Bulgaria: Institutional Powers and Real Power (a Comparative Study of Presidents Zhelev, Stoyanov and Purvanov)*.

In this respect **another important circumstance** should be taken into account. The title of the doctoral dissertation has two sides: overt and covert. In the **overt** type, the meaning is exposed on the title page, whereas in the case of the **covert** type – it is interpreted as a limitation of the analysis that invariably accompanies the introductory stage of the dissertation draft. Hence meaning interpretation only by the overt title may prove imprecise – and the assumption of an invalid title would be at least imprecise. The title's length and the restrictive conditions (in terms of space, time and essence) bear resemblance to interconnected vessels: the short title almost invariably imposes restrictions, whereas the expanded one less so.

As a result of the careful interpretation of the headlines, the following types of imprecision were established (described in table 2).

Table 2: Drawbacks in creating titles of doctoral dissertations in economic sciences

Title	Established imprecision
1	2
Public communications and politics: the Discursive Construction of Bulgaria's Image in the British Media and Political Debate	The first three words explicitly state generic belonging, which is redundant. If they are eliminated in the title, it will be briefer, clearer and more acceptable – The Discursive Construction of Bulgaria's Image in the British Media and Political Debate . The generic belonging is implicitly understood.
Mixed Economic Policy: Quasi-market Sector	Generally speaking, several aspects should be revisited with regard to this title. The first , the topic is not sufficiently precise, and it is indefinite because the research topic is missing. What in particular from the quasi-market sector will the analysis focus on: the definition of the sector and its genesis, content, functions, structure, role, results, trends, institutions, etc? Secondly – a possibly unique title would be Implicating the Quasi-market Sector in the Mixed Economic System , given that hence an active and productive analysis will be determined. Third , the offered title contains two institutional aspects: object – mixed economic system and research topic – the quasi-market sector. Thus formulated, the title is clumsy, globalish where strict orienters are lacking, and with a flair of fundamentalism. It seems to be more adequate for doctor of science rather than for the education and qualification degree of doctor.

Continued

1	2
Climate Fluctuations and the Snow Cover in Bulgaria	<p>A derivative title would be better targeted and more scientific in nature: The Impact of Climate Change on the Change in the Snow Cover in Bulgaria – in this case the two centers are eliminated (climate fluctuations and changes in the snow cover), yet the research focus is shifted/changed.</p> <p>The syntactic analysis of the title of this doctoral dissertation is: object – the snow cover in Bulgaria, research topic – changes in the snow cover and feature – climate fluctuations. The title would be valid only if the doctoral student assumes that its two parts are analyzed only in sequence, that is, within the unidirectional relation between climate change and level of snow cover. After all, the opposite relation is also possible: between snow cover and climate change.</p>
Theoretical Modelling of Teachers' Skills that Are Basic in the Training Process at School	<p>This is a typical case in which the doctoral students have perceived complicated and mixed boundaries: the object is teachers' pedagogical skills that are basic in the training process at school, research topic – the modelling of these skills and feature – theoretical modelling. Such complexity could have been overcome in advance if the title was reduced to: Theoretical Models of Teachers' Basic Pedagogical Skills (where – the object is teachers' pedagogical skills, research topic – models of these skills and feature – theoretical models).</p>
Applying Marketing Tools to Standardization in Tourism	<p>It remains unclear how the application in question should be interpreted: as mechanism/technology, geography, result, etc – some clarification is needed.</p>
Applying Volunteer Tools to the Bulgarian Firms' Environmental Policy	<p>Perhaps what is envisaged in this case is a process, not a result! What does the application refer to: technological devices, staff provision, forms, norms, etc?</p>
Applying Economic Tools to the Management of Household Waste in the Municipalities in Bulgaria	<p>The title is not positioned well – it is interesting to find out how all municipalities in Bulgaria have been covered: perhaps the final words should be revised to <i>Municipalities in Bulgaria</i>.</p>
Labour Evolution and the Human Role in Economic Activity	<p>The title is bifocal. Obviously the better option would be The Impact of Labour Evolution on the Human Role in Economic Activity, though this presupposes a shift of focus.</p>

Continued

1	2
Economic Activity and Role of the Orthodox Church	There are several unclear aspects in this title. The first is what impacts what. Or else, if the relations is two-directional, which should be the title's correct interpretation. Second , if the idea is that the first should impact the other, then the correct title should read as follows: The Impact of Economic Activity on the Orthodox Church (yet the question remains open as to what in the church is impacted). And vice-versa – The Impact of the Orthodox Church on Economic Activity . Third , at first glimpse it is unclear what level of economic activity is being analyzed: single or national – this would shift the focus of the doctoral dissertation.
The Deviant Policy and Its Impact on Share Prices	The title should be rewritten as follows: The Impact of Deviant Policy on Share Prices and this will not change the dissertation's meaning: the definite article before deviant suggests an exhaustive analysis, which is in itself a utopia.
Multilateral Cooperation in Climate Change and the EU's Role	The better option of the title is: The EU's Role in the Multilateral Cooperation in Climate Change
Svishtov's Economic Development and Tsvyatko Radoslavov Commercial Firms' Activity During the Renaissance	The direction of determination is unclear: is the economic development impacted by Radoslavov's firms or else, are Radoslavov's firms impacted by the economic development?
Model of Integrated Management of Acquired Value and the Risk of Prioritizing Projects	The better option of the title is: Measuring the Risk in Prioritizing Projects by Using the Model of Integrated Management or The Impact of the Model of Integrated Management on the Risk in Prioritizing Projects
Emotional Intelligence and the Behaviour of Organizations and Citizens	The topic is too broad and there should be assumptions in the introduction about the necessary narrowing of the analysis
Corporate Management and the Banking Sector	Thus formulated, the topic is too broad, the focus should be shifted to some part of it so that an in-depth analysis be provided.
The Increase of Consumer Satisfaction with Courier Services by Raising Their Quality	Satisfaction means level of contentment, and Raising Their Quality should be reinterpreted
Problems of the Financial Policy in the Pharmaceutical Industry	Doctoral dissertations with the world problems, that is en gross information, are unacceptable. Doctoral research should focus on one problem or even part of it, not on a set of problems.
Trade Balance, Foreign Direct Investments, Economic Growth	Such a title cannot possibly be accepted for doctoral dissertation, the broad topic is more appropriate for holding a scientific conference

Continued

1	2
Financing Albania from EU Funds. Opportunities for Using Bulgaria's Experience.	The better options for the title are Financing Albania from EU Funds and The Potential To Use Bulgaria's Experience or Opportunities for Using Bulgaria's Experience in Financing Albania from EU Funds . Attempts should be made to write the title in a single sentence.
Economic Cohesion of Bulgaria with the Eurozone Countries. Net Benefits and Risks from the Introduction of the Euro.	There are two topics in this title. The better option would be: Economic Cohesion of Bulgaria with the Eurozone Countries in the Context of Assessing the Introduction of the Euro.
Methods of Integration of Systems for Business Process Management in Corporate Information Systems	It is not recommendable that there be repetition of the same word in the title. Systems should have been replaced in the second part of the sentence with constructions or formations.

The types of imprecision identified above are just a small cog in the chaos of the dissertation process which expose certain fluctuations in doctoral regime. The choice of the improper sentence by itself *encodes* the element of chaos, which in any case precipitates negativism, and at times this constitutes a typical destruction, while in other cases – a constructive degradation.

A set of factors determines whether the dissertation creativity is pushed into a positive or negative direction. The factors are as follows: the level of methodological literacy of the doctoral student and their scientific supervisor, the doctoral student's scientific and creative talent, the technical and financial provision of the doctoral process, the market-oriented topic of the doctoral dissertation, social microclimate in the training organization, etc.

There is no doubt that the synergy of the doctoral dissertation (the overall integrity of the doctoral process) acts through a system of stabilisers that provide for the harmonious implementation of the separate processes simultaneously in the individual and social aspect of the phenomenon under investigation. The individual agents of the examined system are the doctoral student, their scientific supervisor, the separate training unit (including the staff of lecturers in the different courses), the consultants, among other, whereas the social agent – the behavioural standards, the observation of which guarantees the transition from individual to social nature of the doctoral dissertation/doctoral studies. What serves as the bridge in this process is the social council that accepts the result of the performance during the doctoral process – the scientific panel. Its positive vote is based on the satisfaction that its members develop with the value (quality)

of the performance during training, the writing and defense of the doctoral dissertation, which is determined by the appraisal evident in the accumulated research competence (the diploma) – which serves as a specific patent for the student that has defended his doctoral thesis to join the market of intellectual labour.

The synergy panorama of the doctoral process is an important aspect in academic training during the third level of higher education. This symbiosis provides an inexhaustible source for additional ideas which are transformed into practical tools used to strengthen the doctoral student's skills in writing and self-esteem in research.

Conclusion

For centuries on end science has had as its economic karma the opportunities it opens up to create *added value* based on interaction that at a later stage develops into the unity, including the one based on contemporary digitalization, between natural and humanitarian sciences. What is more, during the second decade of the 20th century, the Russian scientist, doctor, economist, philosopher and writer Alexander Bogdanov (1873 – 1928) in his book *The Universal Organization of Science. Textology* calls for the creation of a unified science about the world based on the assumptions about the universality in the dynamics, which is in turn based on internal integrity, external adaptation and and shifting equilibrium. During the third decade of the 20th century, the Ukrainian naturalist with encyclopaedic scope (minerologist, crystallographer, biologist, philosopher, science theorist, social theorist, the founder and first president of the Ukrainian Academy of Sciences) V. Vernadsky (1863 – 1945) substantiates the common and single action between the *biosphere* (the field of life) and *cosmic life* (phenomena and processes), which results in the creation of a society of reason (noosphere – a concept launched by the French scientists Le Rois and Teilhard de Chardin) – a freely reasoning humankind in a single whole. Now it is the science-grounded reasoning that guarantees the success of each and every enterprise. These processes with a higher relevance pertain to our contemporary world and condition the mobilization of all factors of growth in unity so that the pillars of modern wellbeing and welfare of nations are established. The obvious fact that synergy is a necessary possibility has the power of an imperative. It is the law of the nature of things and determines the mutual assistance between things, phenomena and processes with a view to meeting the needs of society.

In the doctoral process it is synergy that provides the balance between the forces of progree and regress, and determines the responsible behaviour of the state, training unit, collective team, scientific supervisor and doctoral student in relation to the creation of the elite in science.

Apart from the universal provision of the doctoral process, in terms of the human factor we should bear in mind that first, the doctoral studies are the flagman of higher education, second, the doctoral student should not only have the aspirations to reach the summit of science but also have the ability to do so, third, the path to big science is not an independent process but is instead teamwork involving the predecessors, the doctoral student and their surrounding environment of intellectuals, fourth, none of the factors of the doctoral process should be regarded as neutral to the buildup of scientific competence, it is matter of common efforts given that the benefit is also common, fifth, the doctoral process is the constitution of wellbeing and the sooner this assumption is fully comprehended, the more impressive will the achievements be.

There is yet another fairly revealing aspect that pertains to the overall portrait of development. The principles of hierarchization, the parameters of order, the mandatory feedback to achieve self-sufficiency are determined by the development of science and its application in practice. Every act of ignorance (chaos), no matter how we tend to assign it the role of the determinant of disorder and the precursor of its elimination, is and will always be a chance unpredicted by science (chaos domination undermines the utilization of science-based meaning). This is the reason why every science should be interpreted in its two aspects: as theory and as art. The two should be taken care of meticulously during the doctoral process. Hence in the condition of an economy developed on the basis of modern science, synergistic interaction should be carefully explored, studied and guided.

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