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## **SYNERGETIC ANALYSIS OF TRANSITIONAL CHANGES DURING NATIONAL LIBERATION STRUGGLE OF 1917-1921 IN UKRAINE**

This article aims to analyze Ukrainian political process in times of national liberation struggle of 1917 - 1921 from the point of synergetic approach. Based on the concepts of such prominent scholars as H. Haken, I. Prigogine, O. Dobrocheev, P. Turchyn and A. Korotayev and by means of synergetic methodology the authors distinguished two levels of analysis of the problem: on macrolevel, in terms of the whole Russian Empire, the bifurcation point lasted for more than 4 years up to 1921; on microlevel, within Ukraine, there were several obvious periods of deterministic influence and, accordingly, several points of bifurcation observed in October-November 1917, April 1918, November-December 1918, August-September 1919.

Operating by the concept of power density the authors expressed the hypothesis that a drastic reduction in duration of periods of deterministic development and frequent occurrence of bifurcation points was caused by "crushing" of total political entity.

**Key words:** synergetic approach, deterministic development, bifurcation point, power density, emergence of a system, transitional changes, national liberation struggle, Ukraine.

Multifactorial nature of political processes is widely recognized among scientist. At the same time this multifactorial nature has turned into an obstacle for adequate and verifiable research results; it is extremely difficult to ascertain quality and quantity of influence of individual factors on a particular process and, moreover, the issue about taking into account the whole set of factors is always urgent. A variation of this problem is identification of the most important factors of sociopolitical processes which determine occurrence of critical moments in development of society.

It should be noted that rather grounded allegations concerning nonlinearity and chaotic nature of any processes related to human social activity began to appear in the humanities of the late twentieth century. We can recall that non-equilibrium nature of political system and political life in general was pointed out by D. Easton: "The most important drawback in analyzing equilibrium states, the type of analysis that prevails in political researches, is that it virtually ignores ability of systems to cope with disturbing action of environment"<sup>1</sup>.

H. Haken and I. Prigogine substantiated that the most adequate way to consider nonlinearity of social space and identify real effective factors of political processes was application of synergetic methods as specially designed for simulation of nonlinear dynamics<sup>2</sup>. Theoretical development of synergetic approach is also associated with such scholars as R. Tom, B. Mandelbrot, Y. Klimontovych, S. Kurdiymov, G. Malynetskyi, D. Cherniavskyi and others.

Possibilities to use chaos theory and nonlinear dynamics in political studies were evaluated by many researchers, including I. Prigogine, I. Stengers, G. Malynetskyi<sup>3</sup>, T. Brown<sup>4</sup>, O. Mitina<sup>5</sup>, V. Petrenko,

<sup>1</sup> Истон, Д. (1997). Категории системного анализа политики. Антология мировой политической мысли: в 5 т. Москва: Мысль, Т. II, 632.

<sup>2</sup> Пригожин, И.Р. (1986). Наука, цивилизация и демократия. *Futures*, Vol. 18, 4 (August), 493-507.

<sup>3</sup> Малинецкий, Г.Г. (1997). Нелинейная динамика и "историческая механика". *Общественные науки и современность*, 2, 103-109.

<sup>4</sup> Brown, T.A. (1996). *Nonlinear Politics. Chaos Theory in the Social Sciences: Foundations and Applications*. Ann Arbor: University of Michigan Press, 119-134.

<sup>5</sup> Митина, О.В., Петренко, В.П. (1999). Синергетическая модель динамики политического сознания. *Синергетика и психология. Тексты. Методологические вопросы*. Москва: Союз, вып. 1, 336-358.

L. Shkarenkov<sup>1</sup>, M. McBurnett<sup>2</sup>, Y. Sviatets<sup>3</sup> and others.

Moreover, contemporary development of transitology is accompanied with realization that real political development, especially in post-Soviet countries, does not correspond with theoretical transitional schemes, resulting in growth of skepticism towards transitology as a scientific field. A number of scientists in their works draw attention to the crisis of contemporary transitology studies describing problems in application of transitional paradigm and predict further decline of this scientific field<sup>4</sup>.

In this regard, O. Romaniuk said that "it would be more reasonable to perceive present development of transitology as a crisis stage in which the dominant paradigm is tested and reviewed. Crisis does not mean the end of the scientific field or rejection of democratic standards and procedures, change discourse. Crisis does not cause revision of liberal value orientations of transitology. This crisis may be overcome by significant upgrade of transitional methodology and theory"<sup>5</sup>.

We should agree with the words of O. Romaniuk concerning theoretical and methodological renovation of transitology. It worth noting that new impetus for development of its methodology may be given by synergetic approach to studying transitional processes.

In order to find real effective factors of sociopolitical processes and considering generally recognized supercomplexity of modern political process, it is helpful to study more "simple" processes of the past, namely political processes of national liberation struggle of 1917-1921. On the one hand, it was one of the recognized critical points of sociopolitical development; on the other hand, these processes were more homogeneous from synergetic point of view that would facilitate creation of synergetic description of modern politics. It should be stated that synergetic analysis of national liberation struggle of 1917-1921 may represent an independent value, because this methodology is not often used in studies of this period.

Thus, the purpose of this article is to analyze political process of national liberation struggle of 1917-1921 in Ukraine in terms of its manifestation in presently known attributes of chaotic, synergetic process. Obviously, this era somehow correlates with the concept of "bifurcation point".

Of course the main achievement of synergetics is that within its framework by analyzing known models were identified universal laws of origin and development of complex systems and complex cooperative behavior. One of the founders of synergetics - I. Prigogine - proved that social systems are periodically chaotic. This means that some (according to I. Prigogine - most) of the time in development of such a system is development according to the scheme of deterministic chaos, i.e. development in a self-organization mode, and at some periods occurs true situation of chaotic development, or continuing I. Prigogine terminology, non-deterministic chaos, called a bifurcation point. Actually, the term bifurcation comes from the Latin *bi* - double and *furca* - fork (divarication). That is the term bifurcation means a situation of uncertain choice of further development trajectory. At this point a system "chooses" the trajectory of future development.

It should be noted that by analogy with discovered by I. Prigogine respective states of deterministic chaos and bifurcation points in microcosm, I. Prigogine and his followers offered to transfer the following assumptions on social macrocosm:

While a system stays at the point of bifurcation any the smallest action of the least influential actor can lead to unpredictable hypertrophied consequences that is often described in popular synergetic essays.

Then, after passing the bifurcation point and system's exit on a sustainable trajectory (deterministic chaos period), development of a social system remains chaotic in its essence, but it is already precisely determined, defined by inner essence of a certain order parameter. During this period, each actor is also able to make and take actions on their own discretion, but these chaotic, in terms of a system, actions can not lead to a fundamental change in trajectory of sociopolitical system.

A fairly successful historical example of such synergetic interpretation of sociopolitical processes is a history of the Russian Empire in the 19th - early 20th century and later the Soviet Union and its wreckage. Indeed, the death of Tsar Alexander I and Decembrist uprising in 1825 has a certain analogy to bifurcation

<sup>1</sup> Шкаренков, Л.К. (1996). Россия в неустойчивом мире. Москва.

<sup>2</sup> McBurnett, M. (1997). Complexity in the Evolution of Public Opinion. *Chaos Theory in the Social Sciences: Foundations and Applications*, 165-194.

<sup>3</sup> Святець, Ю.А. (2008). Злами в історії як точки біфуркації. *Ейдос. Альманах теорії та історії іст. науки*. Київ, вип. 3, ч. 1, 297-318.

<sup>4</sup> Carothers, T. (2002). The End of the Transition Paradigm. *Journal of Democracy*, vol. 13, 1, 5-21.

<sup>5</sup> Романюк, О. (2007). «Кінець транзитології» чи криза її первинної парадигми? *Політичний менеджмент*, 2, 3-15.

point in development of the Empire, when the choice of a trajectory of its further existence depended on several steps. Under certain circumstances the tradition of autocracy has won, which development was not prevented either by reforms of Alexander II, nor peaceful and armed-terroristic opposition. Even the murder of Alexander II simply hardened the regime and stopped "revolutionary intentions" for a while. But the totality of insignificant comparing to the size of the country events, such as unfortunate end of the Russo-Japanese War and Bloody Sunday leads to a revolutionary explosion. So we have a situation when sustainable trajectory of sociopolitical system of the Empire ends up and enters into uncertain period called the bifurcation point. On the other hand, if changing system of public administration is the index of significant sociopolitical changes, then the indisputable evidence of the bifurcation point is the February Revolution of 1917, when the monarchy was replaced by a republican form of government headed by the Provisional Government.

According to synergetic interpretation the origin of bifurcation point in development of a system should be indicated by situation of inadequately great response from relatively small perturbations. Indeed, many scholars noted a "sudden" appearance of many problems "without any visible reasons"<sup>1</sup>. Speaking the language of synergetic approach, specific chaotic regimes of the order parameter dynamics emerges within a long process. Synergetic representation of processes implies the principle of subordination, according to which dynamics of different small factors that affect sociopolitical process is determined by changes of other, mega-factor - the order parameter. And the inverse relationship between order parameters and components of state vector leads to what is called circular causality or feedback.

Among the attempts that were made in order to invent the order parameter, which dynamics caused catastrophic consequences in 1917; the most successful so far are studies that associate this option with demographics<sup>2</sup>. We can expect many more discoveries and debates towards identifying the genuine order parameter of political process of that era, but it should be noted that analysis of the bifurcation point, which signs clearly manifested in 1917, remains aloof.

The most important problem in the study of bifurcation points of sociopolitical systems is their duration. It will be logical to assume that the time of occurrence (existence) of bifurcation point should be somehow correlated with duration of deterministic period preceding this point. According to I. Prigogine, social and political development is periodically chaotic.

To our knowledge, there are few studies in which attempts are made to estimate duration of deterministic development. One of those involved in this problem is O. Dobrocheev<sup>3</sup>. O. Dobrocheev notes that a transition to a qualitatively new world order characterized by globalization of financial and political structures takes place before our eyes. According to this author, interaction of particular human communities (tribes, nations, states) in chaotic expansion and competition at some point will lead to spontaneous emergence of self-similar social and economic structures, just as Bernard cells appear in a heated from below fluid. O. Dobrocheev believes that order parameter in this case is ratio between typical lengths of communication interactions (correlation length) to the diameter of the globe. In the late 20th century development of the Internet and the global financial market has led to a state of bifurcation, after which, according to O. Dobrocheev, existing polar world (or rather, post-polar) will become "cellular"<sup>4</sup>.

O. Dobrocheev also gives an assessment of time required for complete settlement of this "cellular" picture of the world. Processes of political structurization: the collapse of such extra large system as the Soviet Union and the consolidation of small states in Western Europe - suggest that future centers will have the size of US or China (about 10 mln. Km<sup>2</sup>). Based on data of N. Kondratiev about 50 years of economic

<sup>1</sup> Бородкин, Л.И. (2002). Бифуркации в процессах эволюции природы и общества: общее и особенное в оценке И. Пригожина. *Информационный бюллетень Ассоциации "История и компьютер"*, 29, 5-19.; Кирьянов, Ю.И. (1992). Влияние различных факторов социального, экономического и политического характера на рабочее движение в России в конце XIX – начале XX вв. *Россия и США на рубеже XIX – XX столетий*. Москва: Наука, 40-78.

<sup>2</sup> Капица, С.П. (2008). *Очерк теории роста человечества. Демографическая революция и информационное общество*. Москва, Ленанд.; Коротаяев, А.В., Комарова, Н.Л., Халтурин, Д.А. (2007). *Законы истории. Вековые циклы и тысячелетние тренды. Демография. Экономика. Войны*. Москва: КомКнига/URSS; Турчин, П.В. (2010). *Историческая динамика. На пути к теоретической истории*. Москва: URSS, ЛКИ.

<sup>3</sup> Доброcheev, O.B. (1999). *Вектор эволюции человека*. Москва: МИФИ; Доброcheev, O.B. Следы истории <[http://ss.xsp.ru/st/002/index\\_4.php](http://ss.xsp.ru/st/002/index_4.php)>.

<sup>4</sup> Доброcheev, O.B. (1999). *Вектор эволюции человека*. Москва: МИФИ, 8.

and political cycle typical for industrial society, O. Dobrocheev suggests that final formation of the "cellular" world will need several cycles, or about 100 years.

Based on the assumptions cited above, O. Dobrocheev justifies the assertion that the cycle of sociopolitical development is proportional to the square of a state. For example, O. Dobrocheev gives the following calculations for Russia. Since the area of Russia is approximately 17 million Km<sup>2</sup>, so the length of cycle for Russia should reach  $50 * 1.7 = 85$  years. Accordingly, this assessment of duration of typical cycles correlates well with cycles of about 80 years, describing political development of the last century (1825 - 1905 - 1985)<sup>1</sup>

We should note that numerical calculations of O. Dobrocheev are better targeted at states with large area at the future enormous cells of the world, which final formation will take place for a hundred years. Unfortunately, if to use these calculations and calculate the duration of typical cycle of political and economic development in Ukraine, the result will be quite illogical: based on the Ukrainian area of 0.6 million Km<sup>2</sup> the cycle should reach  $50 * 0.06 = 3$  years. So we have a situation when a significant decrease in the scale of a country almost completely eliminates calculations of duration of typical development cycle, because three years is clearly not enough to make a full political and economic cycle.

Moreover, correlation between period of deterministic development and number of population or political actors seems equally plausible. Even perfunctory everyday observations allow suggesting that modern Ukraine is unlikely to expect a 85-year or even 50-year periods of determined development without bifurcation points. Rather, over the past two decades we could notice manifestations of 9-10-year periods of deterministic chaos changed by short-lived, up to several months, bifurcation points. Obviously, this development period has far less population of 45 million people comparing to 300 million people in the late USSR. However, we may note that leadership of the modern Russian Federation also should not relax, because current population of Russia is only about 140 million people. So, bifurcation point in political development of Russia will occur much earlier than in 85 years as O. Dobrocheev's calculated.

At the same time this work of O. Dobrocheev makes specific background for assumption that processes of social and political self-organization can significantly depend on spatial characteristics of social and political structures.

So, it seems logical to assume that the order parameter that defines duration of deterministic development of a particular state is either the ratio between number of population and the area of that state, or even the assumption about existence of such order parameter as "power density", which numeric index may be considered the ratio of officials per capita.

These completely correlates with data and research of P. Turchyn and A. Korotayev<sup>2</sup> that with increasing degree of power density should increase duration of deterministic development and thus distance the time of the next bifurcation point. This assumption can explain why approximately regular intervals of determined development have not been singled out within a single country in the world for the last two thousand years - because the size of these intervals has slowly changed as specified ratio between total population and the number of officials had changed. Consequently, these assumptions quite logically allow explaining differences for such intervals as 1825 – 1917 and 1917 – 1991. As for Ukraine it would be more correct to speak about periods 1919-20 - 1991.

Let us return to the issue of duration of a bifurcation point that emerged in the Russian Empire and in Ukraine in February - March 1917. We should distinguish two levels of analysis of the problem: on macrolevel, in terms of the whole Russian Empire, this bifurcation point lasted for more than 4 years up to 1921. On microlevel, within Ukraine, there were several obvious periods of deterministic influence and, accordingly, several points of bifurcation observed in October-November 1917, April 1918, November-December 1918, August-September 1919.

The most dynamic transitional changes took place when Ukrainian Central Council received power. Particularly worthy of consideration process of elections to the Constituent Assembly UPR - first independent elections in Ukraine, which had become a springboard for political transition in 1917.

When the Provisional Government came to power in Russia convocation of the Constituent Assembly was among the list of the most important tasks that were outlined in the Declaration of the Provisional Government on its composition and tasks. Meanwhile, in the territory of post-revolutionary

<sup>1</sup> Доброचेєв, О.В. (1999). *Вектор эволюции человека*. Москва: МИФИ, 37.

<sup>2</sup> Турчин, П.В. (2010). *Историческая динамика. На пути к теоретической истории*. Москва: URSS, ЛКИ; Коротаев, А.В., Комарова, Н.Л., Халтурин, Д.А. (2007). *Законы истории. Вековые циклы и тысячелетние тренды. Демография. Экономика. Войны*. Москва: КомКнига/URSS.

Ukraine with the creation of the Central Council has began formation of own statehood. On April 6-8, 1917 Kyiv hosted the Ukrainian National Congress, which decided that supporters of the new system in Ukraine should immediately create background for autonomous life. Soon after, during the V session of the Central Council on June 27, 1917 V. Vynnychenko raised the issue of Ukrainian Constituent Assembly.

First of all, in order to hold the elections the Central Council attempted to solve a number of organizational issues. With this aim, at the General Secretariat of was established the commission on convocation of Ukrainian territorial assembly, which task was to develop a particular electoral system in Ukraine, distribute the territory on constituencies, develop a draft budget for the elections and so on.

The next important step was development of its own bill on elections. The most controversial issue was creation and determination of the commission, which would produce a bill. Despite the fact that this discussion began at the VI session of the Central Council in August 1917, finally it was resolved only in October 1917, when the meeting of the General Secretariat was decided to entrust the secretary to compose a commission, which would have made the main points of the bill.

Elections to the Constituent Assembly in 1917 were held on a democratic basis, became the first independent elections in the history of Ukrainian statehood and the prototype of the modern electoral system in Ukraine. History of that period prevails with opinion that these elections, like the Constitution of the UPR in many ways embodied the idea of legal democratic state and the Constituent Assembly had all attributes and functions of institution of political transition.

So what, in terms of synergy, may explain such brief existence of deterministic development and therefore the density of bifurcation points? Indeed, before 1917 and after 1921 duration of deterministic development was much higher. On the one hand, indeed, in the periods before 1917 and after 1921, or, if you will, after December 1922 (creation of the USSR), the territory and the total population of a single sociopolitical entity was much greater. From synergetic point of view this confirms the objective need for a shorter period of deterministic development during 1917 – 1921.

However, the emergence within this period up to three bifurcation points shows that it is not only reposition of territory and population. We express the hypothesis that a drastic reduction in duration of periods of deterministic development and frequent occurrence of bifurcation points was caused by "crushing" of total political entity. We mean a set of political actors, which break down not only in quantitative terms, but in quality also: occurs well known for descriptions of contemporaries situation of uncontrollability; even during Otamanschina in 1919 almost complete (one could say - "autocratic") power of individual otamans was compensated by very small area of application, conditional timeframe of implementation and availability of alike neighboring otamans. Presence of a large number of senior actors in the Central Council (up to 822 people) was compensated by absence of features of real actors - either together or alone, they in fact had no influence.

So, in a situation of "crushing" of political actor the system loses quality of political governance in general; as a system that loses unless individual elements (though such examples took place on the wreckage of the Russian Empire), but the quality of emergence properties - properties of political system that arise as a result of system existence.

Thus, in our opinion, radical reduction of "density" of political power caused by certain sociopolitical circumstances, as radically changes (towards reduction) the period of deterministic development, turning political process in a continuous patchwork of bifurcation points. But it should be noted that the onset of such era does not negate objective synergetic necessity to existence of not only bifurcation points, but time intervals characterized by somewhat deterministic development between them.

Indeed, from March 1917 to late October - early November 1917 sociopolitical development of Ukraine had certain stability despite well-known controversies between the Central Council and the Provisional Government of Russia concerning the powers and certain Universals, unfortunate events at the front and the Kornilov coup. At the same time, a point of bifurcation was very short-lived - two weeks was enough to determine the "owner" of Ukraine for, as it turned out later, only a few months - due to mutual weakening of the Bolshevik forces and troops subordinate to the district headquarters, the Central Council received power in the soon proclaimed Ukrainian People's Republic. Deterministic development resulted by that point of bifurcation was short, but stable enough to withstand the attempt of rebellion during the Second Congress of Soviets in Kiev in early December 1917 and subsequent hostilities on the part of the Republic of Russia.

The next, doubtless, in terms of sociopolitical system, bifurcation point occurred in late April 1918 and also lasted for two weeks - from preparation of coup by Skoropadskyi to formation of Hetman's

government without socialists. Determined development which emerged after that bifurcation point and which direction, according to a synergetic approach, was stipulated by sociopolitical choice again didn't last long. It worth noting, that known stiffness (some would say - authoritativeness in the normal sense of the word) of Hetman's power comparing to the power of the Central Council was compensated by even greater uncertainty of public consensus regarding its legitimacy: almost all politicians of the most popular in the country socialistic direction turned away from Hetman's power, as well as significant amount of population.

Creation of the Directorate on November 13, 1918 and the beginning of armed struggle against Hetman's power brought closer new sociopolitical changes in the country. The situation was objectively doomed to another bifurcation point, as far as Hetman's power had no capacity to overcome a sudden insignificant resistance. Again, power density at that moment was extremely low. Next bifurcation point was also extremely quick: seizure of power by the Directorate and restoration of UPR lasted about two weeks, as well as development trend specified in this point lasted just until early summer 1919.

Hence, we may conclude that political process of 1917 – 1921 national liberation struggle from the synergetic point of view is characterized by alternating periods of bifurcation points and deterministic development; thus, the points lasted for less than three weeks, and development for five to seven and a half months. The most plausible explanation for this state of affairs seems the category of "power density" and emergence of political system. The negative dynamics of both these characteristics, in our view, reduces duration of deterministic chaos and, therefore, the onset of new points of bifurcation in sociopolitical development. The primary challenge for further research is verification of these implications and formal-quantitative conceptualization of "power density" as a scientific category.

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