N. Kondratiev's Long Waves and Cultural and Linguistic Changes

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Abstract. The article examines the correlations between economic matters and cultural ones. It describes a variety of scientific views aimed at understanding the synergetic relations of economic issues to social phenomena, including cultural and linguistic identity. Besides, it gives an analysis of outstanding scientists' works who exercise a multi-sided approach to correlations between economic patterns and different social phenomena, from demography to history, when the theory of economic cycles is used as a research approach and instrumental tool. Special attention is paid to linguistic factors which reflect economic changes and store them in the vocabulary. The emphasis is made on how different linguistic mechanisms reflect socio-economic changes within the theory of long cycles. The research contains a case-study analysis of English identity, evolving together with Britain's technological growth and technology. The author suggests some linguistic mechanisms that imply economic development or stagnation (borrowings, conversion, affixation, composition, terminology, shortening). A conclusion is made about the effectiveness of economic - linguistic correlations as the latter reflect the history of economic changes as well as contain some forecasts about the nearest future of the national community.

1. Introduction
Synergy approach has become very efficient in many spheres of modern life, as the events and facts of real world cannot be described in a straightforward way. It entails a multi-sided analysis of many issues, including the ones, that analyze how economic factors affect social life of people, how geopolitical factors influence the identity of nations, how technological factors are connected with changes in culture and languages of certain peoples etc. When scientists analyze different processes they try to see similarities to be able to suggest some models, regularities and patterns describing the processes. Models and forecasts defining the development of economic systems, migration expectations, ecological tendencies have been conducted for a long time and quite successfully in economics by foreign researches (Carnot N., Koen V. Tissod B. [4], Uribe M. and Schmitt-Grohe S.[19], Friedman W.A.[6] and others) and Russian scholars (Kapitza S.P. [10], Glazyev S.Yu [8], Malkov S.Yu. [15], Sadovnichy V.A., Akaev A.A. [1] and others). Last decades saw a higher interest to structuring historical processes (Turchin P. [18], Kovalchenko I.D. [14], Kurdyumov S.P., Malinetsky G.G. [10], Fukuyama F. [7]) and intensive modeling of demographic trends (Kapitza S.P. [10], Prigogine I., Stengers I. [17] and some others). However, synergetic approach has never been used to describe interrelations and interactions between technological and/or economic factors and cultural-linguistic identity. The necessity to understand how economics impacts identity and how the language as an embodiment of a nation’s identity compiles and stores the information to later reflect it in its vocabulary determines the topicality of the article.

When analyzing the correlations it is important to have an established, functioning tool that can help to structure the material and the theory of long waves or long economic cycles, proposed by Nikolai Kondratiev [12] a century ago can be quite helpful in investigating the changes in social life
of the society shaped by technological and economic changes. The thing is that not only price fluctuations and changes in economic indices constitute a long wave. The phenomenon implies a lot of social and political changes that are caused by technological innovations which were analyzed by N. Kondratiev within a long period, starting since 1780. Each of the periods was connected with innovative discoveries molded by a new source of energy and the understanding of correlations between economic and technological changes and linguistic identity factors defines a high scientific importance of the research. The issue is very complicated as sophisticated interrelations of different factors of human life often distort the whole picture. So, it results in the necessity to understand how economic processes influence such an important field of human activity as identity which is somehow neglected by scholars because the links between different factors that are relevant for the issue evade modeling and even structuring. All this points to the necessity to solve the research task, which deals with the issue of establishing correlations between long economic cycles and changes in such a social phenomenon as cultural-linguistic identity.

2. Theoretical part
Several cycles of different duration have been established by Nikolai Kondratiev: short 7-11 years, medium ones 24, long 50-60 years, and even global ones that attempt to predict the change of the dominant state using the global cycle of the change of civilization in 400 years (which for the Anglo-Saxon civilization ends in the coming decades) [12, 13]. Nikolay Kondratiev analyzed the cycles of 1770-1830, 1830-1880 and 1880-1930 and on their basis predicted the subsequent cycles of 1930-1980 and 1980-2030 [13]. A later analysis made it possible to identify the countries that were the technological leaders of this period. Synergy approach implies that the science is moving to the level when laws become universal and act simultaneously in physics, demography and many other social issues, identity being one of them. National identity is an issue that became topical in the 1980-s and is not clearly defined. We adhere to the definition, given in Encyclopedia of global studies, where it is stated that ethnic identity “refers to a set of characteristics by which an individual is recognized as a member of discrete group united by ties of blood and heritage” [5].

The most illustrative in this respect is the vocabulary of the language, which thanks to the achievements of corpus linguistics makes it possible to compare ways of enriching the vocabulary for 200 years [20, 9, 11]. Changes in language are direct reflections of changes in life and the economic role played by the nation in question. Since these 200 years are more a reflection of Anglo-American domination in the world, it is very interesting to analyze how the forms and ways of enriching the vocabulary changed. Therefore, we will try to consider changes in the English language from the point of view of its integration into economic development.

3. Practical analysis: The Case of English Identity
The first cycle lasted from 1770 to 1830 years and was based on the energy of water. It started in Britain and the economic course of development promoted Britain, France, Belgium and Netherlands to the position of dominating leaders. The English language stores it in its vocabulary which can be seen in its vocabulary as the previous language-enrichment models have undergone substantial changes. In the Middle English period (1066 – 1500), which was connected with the French invasion, the main source of vocabulary enrichment were borrowings and the number of French words in English increased to 77.9% and about 64% of all nouns were borrowed [9]. But at the end of the 15th century the picture changes as there appear many new notions, phenomena, things that the language denotes, using metaphoric and metonymic models. For example, an old German word “mill” starts to denote a factory built near water and generating energy by rotation (metaphoric transfer). Such words as “china, tariff” came as geographical metonyms which demonstrates to geographical expansion of British empire. Nevertheless, the number of borrowing is still outstanding, about 79% [9]. At last, at the end of the 18th century there start to appear new word-building model and this period coincides with the switch to a new technological formation, i.e. industrial formation, which makes the first Kondratiev’s economic cycle. As we see at that time the number of borrowed adjectives is reduced to
21.6% and the number of borrowed nouns totals 28%. The vocabulary reveals the geographical range of borrowings which includes words from Hindi, Panjabi, Nepali, Sanskrit, Japanese, Hebrew, Korean, Mande, Chinese, Tibetan and others languages. The colonized territories used pigeons and creols such as Croo-Croo, Beach-la-Mare, Pidgin English and others. The communication with natives often leads to formation of communities that push for new word-formation models because of the open character of the communication as can be illustrated by such Chinese borrowings as ket/chup, ty/phoon. At the same time the expansion of the English language led to very dynamic “composition” word-building process “lady-killer, craftsmanship, slowcoach, hackney-coach, blood-lady”, though many of the words were of short duration.

The second wave starts in 1830 and ends around 1880. This is the time of a very active development of Great Britain, which breaks out in the first place by economic indicators, though France still continues to play an important role in world politics and economy. The main source of energy is steam, which gives an impetus to the development mass production, which in its turn leads to the formation of terminology [2] for which Greek and Latin borrowings and affixation are most important. This period coincides with the selection in the English language of the style of scientific speech. Many Greek-Latin words at this time come as etymological doublets. In the sphere of nouns, active conversion of verbs and especially phrasal verbs into a nomination is important. On colonized territories the English language becomes lingua franca and English swaps the roles of a borrower and a donor to become the latter for the vocabulary of many languages which became possible thanks to Britain’s dominant technological and economic positions in the world. Besides, the British start to actively use polysemy thanks to active semantic transference models: “bed” denotes not only the basis in building, but also an even layer in printing, marriage ties, railway basement etc.

The third wave covers the period from 1880 – 1930, the main discoveries being done in Germany, Britain and the United States. The energy source of the period is electricity and it helped to advance radio, telegraph, automobile and aircraft industry. The world is moving to a more dynamic development and the English vocabulary borrows limited number of words from German (kindergarten, pudel, dachshund, rucksack, swindler, spin-meister etc.) and even less from Russian (rubble, vodka, steppe, taiga etc.). But because the English world dominates at that time we can observe a very dynamic development of such word-building models as conversion from nouns to verbs and from verbs to adjectives (to shelter, to fox, to monkey; to yellow, to cool, to rough etc.). New nouns are often coined by shortening (phone, fence, movie) and abbreviations (MP, GDP).

The forth economic cycle, lasting from 1930 till 1980 is associated with petrochemical industry and the internal combustion engine which promoted communication means, synthetic materials and computers. It is the time of a two-polar world with English and Russian domination in different parts of the world. On the world stage, this is the time of a bipolar world and confrontation between the USSR and the United States. This is the period of important technological inventions and the beginning of know-how era, especially in the USA, and the language reflects the dynamics of life in its word-building. The shortening receives a new impulse in this highly technological period when the ability to fulfill the operations according to a strictly-arranged pattern becomes a guarantee of success which needs short words and clearly states functional duties and practically every scientific article or economic report are full of situational as well as standard abbreviations. The end of the period begins the golden age of the Anglo-American culture, when it was unsurpassed by anyone in the world.

The fifth long cycle coincides with 1980-2030, launching the era of microelectronic elements, for which the source of energy is oil and gas energy, as well as small and alternative energy. Innovative and alternative energy supply leads to active development of microelectronics, information technologies, fiber optics, genetic engineering, innovative military equipment, low-waste technology. The favorites of the economic cycle are the United States of America, the European Union and the countries of Southeast Asia. This is the period of late modern English and we can notice that there is a small number of borrowings (0.2% for nouns and 1.8% for adjectives)[11]. The English language actively penetrates into all countries and spheres of life. However, the vocabulary reacts to this ambiguously. First, the number of borrowings from the Spanish language in American English is
increasing, right up to the formation of Spanglish. Secondly, the scientific style abounds in nominative constructions and syntactic compound words “how-to-ideas, do-it-yourself –ingenuity, greed-and-deceit-count” which are used instead of sentences to present the skeleton of utterances. Thirdly, the role of adjectives decreases and the noun is reinterpreted and receives the function of a quantitative and qualitative characteristic. If we analyze the other potential favorites of the period: the European Union and South-Eastern Asia, we can observe that their technological development nowadays just followers that of the USA, therefore all the new things, inventions, even brand names are named in English.

Conclusion
On the basis of the above-mentioned, it can be stated that the vocabulary of the language is a kind of indicator of the events that occur and as such it indicates the dominance of the given language (due to the domination of the nation) by the increased use of internal resources of the language in the form of word-formation. A great number of borrowings can signal about subordinate economic position of the nation as in the case of an active borrowing process during the first economic cycle in Britain, and there is reason to believe that there is a decrease in the influence of this nation in some or most spheres of public life. Affixation, polysemy, semantical transference indicate active integration into development processes while shortening and new word-building models (branding, blends etc) indicate some chaotic tendencies.

The world is moving to a new economic wave and it is important to understand the role of nations in this new technological cycle, especially, their possible leadership or less important role. Taking into account the above-mentioned information we can conclude that a language follows economic trends and at the same time it can give us a hint about future tendencies as it demonstrates to us that small changes and disorders can in the next cycle evolve into something very important. At the moment we observe the process of borrowing by other languages from the English language. Nevertheless, the English borrowings from Spanish become quite common, especially in southern states. Besides, nowadays, even in New York there are signs and posters in English and in Spanish. What is interesting, there has appeared a new pidgin, Spanglish, to ease the communication between Americans and Hispanic community. The pidgin language lacks uniformity when English words are adapted to Spanish phonology and it uses code-switching, which means that both Spanish and English ways of grammar structure are present in the language. These are mere language changes but, as we know, they reflect the state of the community, its world-view approach. And chaotic changes in the world-view of the global leader can result in possible changes in economic, geopolitical and social spheres.

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