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DIGITAL INNOVATIVE COMMUNICATION MODELLING (BASED ON INNOVATIONS OF THE ASIAN LANGUAGES)

Summary. The problem of theoretical and methodological substantiation of cross-cutting principles, directions, mechanisms, and results of qualitative dynamics of macro- and microstructures of vocabulary in the field of the digital realm as a consolidated linguistic object is still awaiting a comprehensive study. The analysis of this issue requires the involvement of a phenomenological perspective of the study of complex linguistic objects in view of the main task of phenomenological epistemology - knowledge of the full system of facts of consciousness that constitute reality. The paper overall objective is the inquiry into the phenomenological premises of comprehensive structuring of global innovative language based communication of in the realm of modern digital technologies (Global Innovative Logosphere of the digital realm as construed by the transformative neological strata of the modern globalized languages). The principles of the dynamics of the microstructure of the global innovative logosphere of the digital realm are determined on the basis of the analysis of the lingual mechanisms of phenomenological reduction. An integrative parameter of the dynamics of the global innovation logosphere of the digital realm is the phenomenon of attraction of the corresponding general discrete innovation units of the logosphere, which are the centers of semantic phenomenological units clustering in global communication languages in digital environment. Mosaic, simulation, and multidimensional approaches to understanding complex dynamic linguistic phenomena and entities, prioritized by this methodological context, allowed us to identify the ontological nature of computer lexical innovations of the globalized Asian languages (namely, the ability to embody and structure elements of the relevant realm of life independently from the filter of human experience), which enables and provides a complex determinative interaction of multisubstrate (linguistic, existential and anthropological) parameters of the innovative logosphere of the digital realm. The dynamic interaction of the structural stages of the ICTs content plane within the linguistic innovative communication in the digital realm is characterized by the expansion of the ontological denotatum, resulting in isolation/absorption/replacement, or partial isolation/absorption/replacement of anthropogenic parameters of the content plane, mediated by the subjective and collective cognitive experience of native speakers of globalized languages in the realm of functioning and use of digital technologies (the area of the conceptual core projection of the logosphere onto the innovative communication in the digital realm).

Key words: digital innovative communication, digital realm, innovative computer term, Asian Languages.

Problem statement and state-of-the-art review. At the turn of the XX–XXI centuries science acquires the status of extremely effective and dynamic tools of human activity, which determines the interest of scientists in pragmatic aspects and problems of cognitive theory to increase the effectiveness of scientific work by traditional classical means and innovative systems of artificial intelligence [1; 2; 3; 4]. The network of research space of modern linguistic explorations provides an opportunity to determine the problems of language coding, transcription and mapping of different spheres of actual and conditional reality in lingocognitive [5; 6], linguistic and cultural [7], discursive-communicative [8], synergetic [9] planes. As an integral product of civilization modern computer reality has become an independent being. Within it electronic media act not only as a means of transmitting information or interaction, but also reveal their own world-creating, meaning-making, and as a consequence language-forming potential [10]. The digital realm is defined as a complex, multidimensional sphere of synthesis of reality, human experience, and activity, mediated by the latest digital and information technologies [11]; it is the object of study of a wide range of humanities. In philosophy, computer being is interpreted as a special type of substance – material and ideal reality in the aggregate of all forms of its development [12]; in psychology – as a psychosomatic and emotional plane [13]; in culturology – as a sphere of spiritual experience [14; 15; 16], in sociology – as a system of multilevel, multidirectional social relations [17; 18].

The linguistic aspect of the study of computer being at the turn of the century is determined by objective historical and geopolitical preconditions: cyberization, globalization, informatization of world society, Americanization of world culture, due to which modern English, mostly its American variety, is a priority linguistic and communicative environment of the primary language coding of elements of the digital realm and its mental and linguistic mapping [19; 20], exported to globalized languages across the world. The problem of theoretical and methodological substantiation of cross-cutting principles, directions, mechanisms and results of qualitative dynamics of linguistic macro- and microstructures of vocabulary in the realm of computer being, as a consolidated linguistic object, is still waiting to be studied. Consideration of this issue requires the involvement of the phenomenological perspective of the study of complex linguistic objects, given the definition of the main task of phenomenological epistemology – knowledge of the full system of facts of consciousness, constituting the objective world [21].

Objective. The paper overall **objective** is the inquiry into the phenomenological premises of comprehensive structuring of global innovative communication of modern digital realm (Global Innovative Logosphere of the digital realm as construed by the transformative neological strata of the modern globalized Asian languages).

Main findings. Within the outlined methodological dimension, the “phenomenological” language unit is defined as its codifying ability to record the results of cognitive experience and manifestation in it the substantive characteristics of cognizable objects and phenomena. The linguistic adaptation of the phenomenological approach to the theoretical and methodological understanding of the dynamics of the vocabulary of modern European and Asian languages in the digital realm is based on the concept of the logosphere, synthetically understood as: 1) elements of different spheres of life; 2) the zone of integration of thought-speech continuums (linguo) of cultures. The turn of the XX–XXI centuries is determined by a significant acceleration of the enrichment of the vocabulary of modern natural languages, which determines the need for holistic linguistic research of innovative industries.

Such a study of the vocabulary replenishment of modern European and Asian languages corresponds to a new integrative direction – phenomenological neolinguistics. The global innovative logosphere of computer being, a component of the international language logosphere, is considered as a plurality of verbal innovations, which are phenomenological correlates of the elements of computer being. Phenomenological neolinguistics provides the researcher with the innovative logosphere of computer existence with the functional integrative methodology and analysis procedures, the application of which allows comprehensive coverage of the relationship between the principles of ultra-dense verbalization of this dimension of reality and mechanisms of neologization, nomination, language reference. The proposed linguophenomenological approach to the study of the object of study helps to solve the scientific problem of holistic modeling of processes and results of replenishment of the vocabulary of the highly dynamic system of modern languages in general and its individual areas at the turn of XX–XXI centuries.

The object sphere of phenomenological neolinguistics consists of elements of the logosphere (in particular, the linguistic innovative logosphere of computer existence) in the priority determinative dialectical interaction with the constructs of existence – space, time, substance, phenomenon, essence – corresponding to the object field “ontological neolinguistics”; constructs of knowledge/cognition – episteme, concept, concept – corresponding to the object field “epistemological neolinguistics”, and constructs of human consciousness/self-consciousness – identification, identity, individuality – corresponding to the object field “anthropological neolinguistics”. This inquiry is based on the initial position on the phenomenological nature of computer lexical innovations of modern European and Asian languages (namely, the ability to identify, embody and structure elements of the corresponding sphere of being), which enables and provides complex determinative interaction of different substratum and abstract parameters of the global language innovation logosphere of computer existence. In the process of research, the algorithm of ontospheric and anthropospheric paradigmatic systematization of general language innovative computer terms is introduced.

Within the phenomenological approach global semiotic integration of macroand microstructures of the language

innovative logosphere of computer existence identified as provided and realized due to the deterministic interaction of multisubstrate (linguistic, spatio-spatial, essential, anthropological and social) parameters of this logosphere, given the significant synchronous density of rates and results of parallel development of verbal, ontological and anthropological planes of computer being. Logocentric perspective on computer verbal innovations of modern globalized languages determines their phenomenological nature through the identification of symbolic (structuralsemantic) substrate of these linguistic innovations as an empirical source and result of manifestation of substantive characteristics of reality.

For deductive and inductive determination of types, volume, qualitative characteristics, and direction of dynamics of the content of units of the microstructure of Global innovative logosphere of computer being the elements of a method of conceptual analysis [22] in combination with elements of a method of phenomenological reduction are applied by the end-to-end epistemic deconstruction of the object of analysis (linguistic innovation unit) from the empirical sign substrate, which corresponds to the dialectical concept of “phenomenon”, through tiers of the intensional and the extensional of the content plane to the substantive characteristics of the referent, corresponding to the dialectical concept of “essence”. The inquiry is centered the following core arguments: 1) the phenomenological nature of the linguistic innovative logosphere of the computer being presupposes an inseparable, mutual combination of its lingual and substantive (ontological, epistemic and anthropological) aspects in the vertical plane of the dyad phenomenon: essence mutual disclosure; 2) consolidated substantive characteristics of the macrostructure of the linguistic innovative logosphere of computer being determine the phenomenological specificity of the configuration in statics, end-to-end interaction and mobility of formal-semantic constituents of its microstructure in dynamics.

Identified and parameterized in the course of our study is a significant density and, to some extent, redundancy of innovative verbalization of the conceptual and semantic segment of language linguistics in the field of computer being is, in our opinion, a specific (by extensional characteristics of newly formed language units) of this conceptual and semantic segment for the global language community. In this way, the significance of understanding the elements of computer reality for a specific language community can be inductively verified. In turn, empirically clear and observable situational parallelism of the processes of emergence and development of a wide range of different substrate innovative elements of computer being: – essential elements (space, time, substance), – gnoseological elements (information, episteme, etc.), anthropological elements (existential state, type of identity, etc.), – lingual correlates (language sign, language form, language meaning, language content) determines the theoretical and methodological relevance of defining the problem of positioning this segment of linguistic reality – the general verbal innovations of the English language to denote elements, objects and phenomena of computer life, as special, specific features, consolidated, consistent and systemic type linguistic embodiment (modeling, picturing) of reality.

Substantive characteristics and features of the proposed type of object under study – the logosphere, in the most general sense, and in particular the linguistic innovative logosphere of computer existence determine the need to identify and parameterize

the aspectualized object sphere of the methodological linguistic template of research within the general perspective of the study of complex linguistic phenomena – phenomenological neolinguistics. Outside of component and, more broadly, conceptual analysis, there is usually an ontological level of abstraction of linguistic innovations, which corresponds to the essential elements that parameterize the structure of the ICTs content plane as an innovative and synchronously gnostic phenomenological correlate of different substrates. Such substantive elements, in fact, form the phenomenological basis of the ontological denotatum of ICTs. Given the specific characteristics of the linguistic innovative logosphere of the CB, the identification in the structure of the ICTs content plane of the ontological denotatum reveals the phenomenological originality of the ICTs as a linguistic sign.

The dynamics of Global innovative computer logosphere are ways, directions and appropriate language implementation mechanisms of qualitative changes in the content area of the projection of the conceptual nucleus of the Global innovative logosphere. Empirical identification of defined parameters of GICL dynamics is made possible due to the typological characteristics of the microstructure of Global innovative computer logosphere units – Innovative computer terminus (term-logos) of ICT.

The structure of the content of the innovative computer terminos in European and Oriental languages alike is distributed in the following sabers, and is consistent through a vertical ratio which satisfies the dialectical categories of “essence” → “phenomenon”: 1) ontological denotatum (OD) – a set of meaningful elements of exhaustive degree of substance and epistemic abstraction (phenomenologization attributes, parameters and properties of elements multi-substrat computer being) in the structure of meaning of an innovative computer terminos → 2) conceptual denotatum (CD) – a set of meaningful elements of median level of abstraction mediated by anthropogenic (subjective and collective) cognitive experiences of European and Oriental languages speakers in the area of interaction and use of computer technology, the projection area of GICL conceptual nucleus → 3) lingual denotatum (LD) – semantics of innovative computer terminos.

The “substantive genome” of a linguistic innovative computer terminology is a system of substantive elements in the structure of the meaning of the latter, phenomenologically manifested in the plane of the lingual substrate ICTs. The meaningfully discrete unit of ontological denotatum for innovative computer terminos is perceived as a substanteme – the in-depth and essential element of the content substance of a computer verbal innovation that is identified both deductively and inductively.

Deductive identification is by layering phenomenological diagnostics of the content elements of the GICL microstructure parallel phenomenological reduction and content of computer elements to the definition of being “phenomenological points of intersection” – isomorphic or correlative content substant components. Inductively substanteme is identified through procedural component analysis and correlation of multi-level conceptual structures of the ICTs content. Substanteme is a power indicator of the distribution of elements of the content plan function of a language innovative computer terminology, which attracts actual/implicit/potential services to the ICTs meaning pattern. “Substant genome” is a phenomenologically identified essential “module” of ICTs meaning – the area of absolute convergence

of qualitative characteristics of the element of the ICTs content plane and the corresponding qualitative possibilities of their actualization.

According to the nature of the dialectical consistent correlation of the tiers of the structure of the ICTs content plan within the opposition “essence/phenomenon”, where tier (1) “ontological denotatum” corresponds to the dialectical concept of “essence”, tier (3) “lingual denotatum” – the dialectical concept of “phenomenon”, the discrete elements of tier (3) of the ICTs content plane (seme) and the discrete elements of tier (1) of the ICTs content plane (substantemae) are isomorphic. The principles of dependence of actual, implicit/ potential, conceptual and substantive components of the content plan of a language innovative computer terminology can be represented in the form of the following conditional formula:

$$f(S) = (a^x b^y c^n)^{|e_{1...n}|} (\alpha^m \omega^p)^{|e_n|} = |e_{1...n}| \sqrt[|e_{1...n}|]{(abcn)^{xyz}} \times \dots$$

Where:

– $f()$ – ICTs content plane function, distribution categorizer of different-level elements of the ICTs content plane structure and types of connections and qualitative dependencies between them; – nn – categorizer of causative distribution type of multilevel elements of the ICTs content plane structure (connections and qualitative dependencies between them within the dialectical dyad of cause/ effect);

– $n \sqrt[n]{n}$ – categorizer of the phenomenological type of multilevel elements distribution of the ICTs content plane structure (connections and qualitative dependencies between them within the dialectical dyad essence/phenomenon);

– $| |$ – the substantial module of the ICTs content plane, categorizer of absolute convertibility of qualitative characteristics of the ICTs content plan element and the corresponding qualitative potential of their actualization;

– S – the argument of the function of the ICTs content plan, dialectical unity of three parameters: 1) sapiencia – knowledge; 2) semantics – meaning; 3) signia – a sign; – n – the discrete whole element of the ICTs content plan of indefinite ordinal positioning;

– $a + b + c + \dots + n$ – set of relevant elements of value (corresponds to tier (3) “lingual denotatum” of the structure of the content plan of ICTs);

– $x + y + z + \dots + n$ – a set of conceptual elements of the ICTs content plane, mediated by the cognitive experience of language speakers (corresponds to the tier [2] ‘conceptual denotation’ of the structure of the ICTs content plane);

– α, ω – a set of implicit (available, but not fixed at the level of definition) / potential (predicted to be updated) elements of the ICTs content plane;

– $|e_{1...n}|$ – a set of “substantemae”, deep ontological elements of the ICTs content plane (corresponds to tier (1) “ontological denotatum” of the ICTs content plane structure).

An integrated derivative of the formula power elements –

$$F(S) = \{ |e_n| \times |e_{1...n}| \times \alpha \omega \}$$

is a codification of the phenomenological embodiment of the ontological denotatum of the linguistic innovative computer terminos. The dynamic interaction of the structural stages of the ICTs content plane within the linguistic innovative logosphere of computer being is characterized by the gradual expansion of the ontological denotatum, resulting in isolation/ absorption/replacement, or partial isolation/absorption/replacement of anthropogenic parameters of the content plane conceptual nucleus onto the innovative logosphere of computer being.

The highest indicator of representativeness at all levels of the microstructure of the content plane (from deep to surface) within the total sample of ICTs across European and Oriental languages reveal the following discrete substant elements: | TYPE OF SUBSTANCE: COMPUTER BEING |; | SUBSTANT QUALITY: TECHNOGENESIS |; | SUBSTANT DURATION: SPACE |; | SUBSTANT AFFILIATION: OBJECT OF COMPUTER BEING |. The dynamic interaction of the structural stages of the ICTS content plan within the linguistic innovative logosphere of computer existence is characterized by the gradual expansion of the ontological denotation. Based on the example of the multilingual terminos *digital native* (Eng.) / 數字原生 (Ch.) – the subject of the digital realm, born and raised in a world full of digital technologies – the direction of the dynamic interaction of multilevel elements of the ICTs content plane can be defined as follows: The *digital native* (Eng.) / 數字原生 (Ch.) – unit is included in the synonymous series of multilingual ICTs, which show isomorphic static features and dynamic characteristics on all tiers of the structure of the internal form: *Netgemmer* (Eng.) / 淨發電 (Ch.), *script-kiddie* (Eng.) / 脚本小子 (Ch.) etc.

Conventionally, the results of the dynamic interaction of multilevel elements of the content plan of multilingual ICTs digital native and its synonyms are as follows. As one can see, the vertical expansion of the ontological denotatum (1) elements of the given ICTs (substantemae $|e_1+e_2+e_3 \Rightarrow e_{3,1} = e_{3,2} = e_{3,3}|$) onto the content plane structural level of a lower tier of abstraction leads to qualitative transformations of the structure of the content plane of ICTS at the level of the conceptual denotatum (2) $[y^e_1 + e_3]$, which corresponds to the projection zone of the conceptual core of the logosphere on the innovation logosphere of CB. These content plane transformations of the ICTs *digital native* (Eng.) / 數字原生 (Ch.) are carried out due to: dissipation $[x=person]$; status adaptation $[y=SUBJECT^e_1 =SUBSTANT TYPE]$; alternation $[PHYLOGENESIS=e_{3,3}=TECHNOGENESIS]$; partial alternation of the elements of conceptual denotatum elements by elements of ontological denotatum – a set of ICTs substantemae: $|e_{3,1} = PHYLOGENESIS=e_{3,2} ONTOGENESIS=e_{3,3} TECHNOGENESIS|$). These transformations are manifested on the lingual denotatum tier of ICTs digital native (Eng.) / 數字原生 (Ch.) (both end-to-end and independently) by the evident cumulation of the proportion of ontological denotatum elements of the ICTs.

Conclusions. Mosaic, simulation, and multidimensional approaches to understanding complex dynamic linguistic phenomena and entities, prioritized by this methodological context, allowed us to identify the ontological nature of computer lexical innovations of the European and Oriental languages (namely, the ability to embody and structure elements of the relevant realm of life independently from the filter of human experience), which enables and provides a complex determinative interaction of multisubstrate (linguistic, existential and anthropological) parameters of the innovative logosphere of computer being. The dynamic interaction of the structural stages of the ICTs content plane within the linguistic innovative logosphere of computer being is characterized by the expansion of the ontological denotatum, resulting in isolation/absorption/replacement, or partial isolation/absorption/replacement of anthropogenic parameters of the content plane, mediated by the subjective and collective cognitive experience of native speakers of globalized languages in the realm of functioning and use of computer technologies

(the area of the conceptual core projection of the logosphere onto the innovative logosphere of computer being).

Prospects of further inquiry. The results of the study open wide prospects for studying the substantive parameters of innovative logospheres of computer existence of different languages of the world, further ways and directions of their replenishment and dynamics as a result of globalization of language contacts. Of particular interest for further explorations are models of semantic asymmetry in the eastern languages of the non-alphabetic system.

References:

1. Davis E. Techgnosis: Myth, Magic and Mysticism in the Age of Information. New York : New York Publishers, Inc. 2001. 377 p.
2. Gelernter D. Virtual Realism. Oxford : Oxford University Press. 1998. 138 p.
3. Gunts E. Icon in stone and steel. The Baltimore Sun. Sept. 24. 2000. pp. 21–22.
4. Heim M. Virtual Reality: Practice and Promise. LA : Westport Publishers. 1994. 233 p.
5. Lakoff G. Women, fire and dangerous things. Chicago : CUP. 1987. 614 p.
6. Heeter C. Implications of new interactive technologies for conceptualizing communication. Media use in the information age. Hillsdale, NJ : Erlbaum. 1989. pp. 85–108.
7. Hausser R. Foundations of Computational Linguistics. Springer : Verlag Berlin Heidelberg. 1999. 534 p.
8. Yenikieva, Sania. Word formation system of modern English language: synergetic aspect (on the material of new formations of the end of the XX - beginning of the XXI centuries): dis. ... Dr. philol. Science: special. 10.02.04 "Germanic languages". Kyiv National Linguistic University. 2011.
9. Makhachashvili R., Semenist I. ICT thesaurus modelling recommendations (based on innovations of European and Oriental languages). Studia Filologiczne. 2020. № 7. P. 117-128.
10. Makhachashvili, Rusudan. Models and Digital Diagnostics Tools for The Innovative Polylingual Logosphere of Computer Being Dynamics. Italian-Ukrainian Contrastive Studies: Linguistics, Literature, Translation. Peter Lang. 2020.
11. Nyce J. M. From Memex to Hypertext. New York: Kahn Publications. 1994. 472 p.
12. Suler J. Human Becomes Electric. From Books To Cyberspace Identities. NC : NCU Press. 2009. pp. 21–25.
13. Jacob W. What Dreams May Come. Time. Issue 18. 1998. pp. 29–32.
14. Knight S. Making authentic cultural and linguistic connections. Hispania. Vol. 77. 1994. pp. 289–294.
15. Monnin A. Humanity and Digital Characters in Virtual Worlds: Crossing the Fictional Boundaries. Posthumanity: Merger and Embodiment. Oxford, UK: Inter-Disciplinary Press. 2010. pp. 126–131.
16. Bell D. Social Framework of the Information Society. Oxford : Oxford U. Press. 1987. 315 p.
17. Johnson F. Shall I Compare Thee to a Swarm of Insects? Searching for the Essence of the World Wide Web. The New York Times. 2003. Pp. 10–12.
18. Langacker R. W. Concept, Image, and Symbol: The Cognitive Basis of Grammar. Berlin & New York : Mouton de Gruyter. 1991. 395 p.
19. Makhachashvili, Rusudan and Semenist, Ivan. Phenomenological principles of global innovative logosphere of computer being construction (based on European and Oriental languages). Academic Notes of V. Vernadsky TNU. № 32(71) (1). 2021. Pp. 195-202.
20. Zahavi D. Husserl's Phenomenology. Palo Alto : Stanford University Press. 2003.
21. Langacker R. W. Cognitive Grammar. The Oxford Handbook of Cognitive Linguistics. Oxford : Oxford Univ. Press. 2007. pp. 421–462.

Махачашвілі Р., Семеніст І. Моделювання цифрової інноваційної комунікації (на матеріалі інновацій східних мов)

Проблема теоретико-методологічного обґрунтування наскрізних принципів, напрямків, механізмів та результатів якісної динаміки макро- і мікроструктур лексики у цифровій сфері як консолідованого лінгвістичного об'єкта ще чекає на вичерпне дослідження. Аналіз цього питання потребує залучення феноменологічної перспективи дослідження складних мовних об'єктів з огляду на головне завдання феноменологічної епістемології - пізнання повної системи фактів свідомості, що становлять реальність. Загальною метою роботи є дослідження феноменологічних передумов комплексної структуризації глобальної інноваційної лінгвістичної сфери сучасних цифрових технологій (Глобальна інноваційна логосфера комп'ютерного буття сконструйована трансформативними неологічними пластами сучасних глобалізованих східних мов). На основі аналізу лінгвальних механізмів феноменологічної редукції визначено принципи динаміки мікроструктури інноваційної комунікації у цифровому середовищі. Інтегративним параметром динаміки цифрової інноваційної комунікації є феномен залучення відповідних загальних дискретних інноваційних одиниць логосфери, які є центрами кластеризації семантичних феноменоло-

гічних одиниць у мовах глобального спілкування в цифровому середовищі. Мозаїчний, симуляційний та багатовимірний підходи до розуміння складних динамічних мовних явищ та сутностей, пріоритетні для цього методологічного контексту, дозволили нам виявити онтологічну природу комп'ютерних лексичних інновацій глобалізованих східних мов (а саме здатність втілювати та структурувати елементи відповідної сфери життя незалежно від фільтра людського досвіду), що уможливує та забезпечує комплексну визначальну взаємодію мультисубстратних (лінгвістичних, екзистенційних та антропологічних) параметрів інноваційної логосфери цифрового середовища. Динамічна взаємодія структурних етапів площини змісту ІКТ у мовній інноваційній логосфері комп'ютерного буття характеризується розширенням онтологічного денотату, що призводить до ізоляції/поглинання/заміни, або часткової ізоляції/поглинання/заміни антропогенних параметрів змістова площина, опосередкована суб'єктивним і колективним когнітивним досвідом носіїв глобалізованих мов у сфері функціонування та використання цифрових технологій (зона концептуальної стрижневої проєкції логосфери на інноваційну комунікацію цифрового середовища).

Ключові слова: інноваційний комп'ютерний термін, цифрова інноваційна комунікація, цифрове середовище, східні мови.