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### Features of Epidemiology as Discourse and Formation of Secondary Naming in Linguistics: Neuropragmatic and Comparative Aspects

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**Abstract:** The article partially deals with the peculiarities of epidemiological discourse and the creation of secondary names (COVID neologisms), which have not been covered much before. In particular, socially significant innovative phenomena are described: the total transition of COVID-neologisms to an active commonly used lexicon, semantic and structural changes of epidemiological discourse through destructive influence on doctors and ordinary citizens.

It was found that the main reason for the rapid dynamics and specified structural-semantic changes of epidemiological discourse and the creation in its environment of secondary names is a regular negative neuro pragmatic stimulation of protective mechanisms of the human psyche in complementary external (situational) conditions.

The methods for elucidating these patterns were sociological observations of live drug speech; word-formation, semantic, pragmatic and comparative types of analysis and establishment of neuro pragmatic presupposition by extrapolation methods.

The study was conducted on a limited sample of physicians of two specialties contrasted by neuro pragmatic parameters (epidemiologists and dentists). A total of 18 respondents. Therefore, the results of the study are framework, demonstrative and require extension in the mode of lexicographic and discursological expeditions, followed by the analysis of a sufficient number of linguistic phenomena.

The international significance of the article lies in the fact that the authors have chosen the almost undiscovered problem of metamorphosis of epidemiological discourse at the intersection of linguistics and neuroscience, which encourages scientists to pay attention to the complex causes of the hypertrophic development and spread of epidemiological vocabulary and discourse in general.

**Keywords:** Intraprofessional discourse; COVID neologisms; negative stimulus; discourse alignment; affective neurolinguistics.

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### Introduction

The lexical structure of any language of modern professional speech is characterized not only by the correlation of the regulated and standardized protocols for the use of linguistic units available in it, but also by the possibility to reinterpret them to name what is topical at a certain moment. Besides, the speaking specialist, being in a homogeneous favorable ("his") collective has an informal possibility to add personal meanings. They are based on the physiological need for emotional identification, evaluation, which is presented to the world. Of course, the doctor's discourse, like the speech of other professionals in the sphere of direct contact with clients, has differences: intra and inter professional relations and professional communication with the client.

Traditionally, the specificity of the generated discourse and the emergence of secondary names in linguistics is explained extra linguistically. Particularly much research on generalization (induction) and the visual fixation of individual successful idioms lacks research on personal factors, internal needs and neurophysiological mechanisms that cause active production of professional discourse and secondary naming under conditions of social instability and psychotraumatic professional duties.

We justify the **relevance of this article** by the fact that epidemiological discourse has developed significantly during the years of the COVID-19 pandemic, become mass-medical and constantly generates medical and extra-medical neologisms, which we consider appropriate to call COVID neologisms. Mass communicative epidemiological discourse is emotionally fulfilled, it is accompanied by nervous tension or concern among speakers and even by a change in global public sentiment.

But the most interesting thing is that in the professional speech of doctors it has acquired features that are dissonant with the idea of medical deontology. The key problem of our article is the problem of the sharp dissonance between epidemiological medical discourse and the medical discourse of non-epidemiological medical specialties.

In this regard, **the purpose** of the article is to identify new specific features of epidemiological discourse, to create secondary names in its environment and to clarify the heterogeneous reasons for the emergence and functioning of such features. **The material** served as fragments of Ukrainian epidemiological discourse, individual neologisms of semantic group " COVID-19" and corresponding units of discourse of dentists as

medical professionals, as far removed as possible from the solution of epidemic problems. This was done to apply components of comparative analysis. This choice of linguistic material is explained by the fact that the authors of the article live in Ukraine and have the opportunity as ordinary citizens and consumers of medical services to monitor and record innovative linguistic phenomena.

In the world linguistic discourse, the creation of COVID neologisms is a highly topical problem. It is already overloaded with studies. We are not going to review international publications, which have gathered in the last three years, but let us note: in Ukrainian linguistics alone (mainly derivatology, translation studies, semasiology) we found more than several dozens of recent publications on the material of the Ukrainian language (Kharchenko, 2020); English (Babeliuk & Didukh, 2020), French (Vesna & Teletska, 2020); Slovak (Khoda, 2020), etc. Since on the material of Ukrainian medical (therapeutic, infectious disease, and epidemiological) discourses, there have been many works on the elucidation of morphological and derivational features of COVID neologisms (Tymoshchuk, 2021; Zavodna, 2019).

In connection with all of the above, we have chosen another understudied aspect. We are interested in the comparative characteristics of the sign, functioning and reasons for the appearance of connotative and neutral neologisms in the professional discourse of doctors of nonepidemiological (dentist, surgeon, trauma surgeon) and near-epidemiological specialties (doctor-epidemiologist, infection doctor, general practitioner ("home doctor").We must place a special emphasis on the external (vital) press positions and the underlying neurophysiological mechanisms of the generation of medical discourse, neologisms and their specific use in situations with different types of pragmatic stimuli. To achieve this goal, we selected scientific sources for analysis along thematic axes: affective linguistics, derivatology and its underlying mechanisms, COVIDproblematics, neurophysiology of speech behavior in protracted stress situations, etc.

This approach allows a direct connection of the topic with the problems of the journal and, in our opinion, will indicate new prospects for the neuro pragmatic study of language and speech in a tense social situation, which will provoke native speakers to identify the markers of innovation features.

The purpose of the article and the above-mentioned statement of the scientific problem allowed us to choose the following methods: sociological (questionnaire survey of doctors to collect innovative words and idiomatic combinations), method of unconcealed observation to staff a mini-corps of fragments of medical (epidemiological and dental) discourse. Note that the study was conducted on a minimal, and thus demonstrative, rather than representative sample. A total of 18 doctors (12 family practice physicians and 6 dentists) participated in the data collection. The respondents provided 68 neologisms of both semantic groups and 7 fragments each of the live professional discourse (doctor - doctor and doctor - client) of the specialties they provided. The methods of analysis of the received data - word formation, semantic, pragmatic and comparative analysis of speech material; method of extrapolation of neurophysiological, social (neuro pragmatics) presuppositions to innovative language phenomena in order to establish deterministic connection between production situations, occurrence and use of professional innovations in the context of human brain and psyche work. Quantitative methods were practically not used, since the article is theoretically and demonstrably of a theoretical nature and aims to outline interdisciplinary perspectives on the study of the latest epidemiological discourse and word formation.

# Neurophysiological and social aspects of the creation of secondary names during an epidemiological crisis

Neurophysiological studies of vocabulary have existed for a long time, but at first only for medical purposes (for example, semantic analysis of aphasia). At the end of the 20th century, the psychophysiological foundations of semantics, defined on the patterns of functioning of the defective brain, were first effectively used in semasiology and dervatology (Akhutina & Glozman, 1995).

A few years ago it was conclusively proved that the generation of new words or the use of peripheral secondary meanings is related to the neurophysiological mechanism of reflexion, that is, it is automatic. Such processes can be recorded neurovisually. Now mankind can for the first time "see" emotions accompanying speech (Schiller et al., 2019). In addition, scientists have identified dual neural channels and their types. Their functional commonality consists in separate and reflexive perception of visual and visual signs and linguistic reproduction of such signs (Schiller & Lieber, 2020). As a result of research, scientists obtained an unexpected result: at the neurophysiological level it is very easy to trace the existence of special neural connections for the formation of neologisms and the typical formation of frequently repeated syntactic constructions (Pitts et al., 2010). These studies were conducted on patients with deficient or hypertrophied linguistic functions, that is, scientists saw the process in a concentrated way. From the point of view of linguistics, this neurophysiological mechanism proves: a) there may be other mechanisms of reflexive generation of speech; b) the neurophysiological ability to repeat ready-made and create new units of language and speech is inherent in human nature. When studying medical discourse, which in our time has begun to absorb situational and regular manifestations of idiostyles, subcultural slangs, metaphorical meanings, we can use neurophysiological and neurolinguistic mechanisms to understand and explain the functioning of secondary, especially connotatively hued names as elements of professional speech.

Neuroscientists in recent decades have traced the underlying natural causes, mechanisms, and patterns of common language use, the development of personal idiostyle, and the emergence of casional word usage (Semenza & Mondini, 2006). It became clear to scientists: if the main function of language is communicative and serves two key human needs - information exchange (informative) and emotions (expressive) (Berbets et al., 2021; Demchenko et al., 2021; Karasievych et al., 2021; Kosholap et al., 2021; Prots et al., 2021; Sarancha et al., 2021; Stanca & Tarbujaru, 2020). Therefore, it is natural to study intellect, memory, emotions and speech reflection of the external world as general objects of neuroscience and general linguistics in the section "Nature of Speech" in an integrated way.

Developing this theme, scholars have recently separated affective neurolinguistics, the object of which became the usual phenomena of connotation, linguistics: expression, individual word formation. transonimization, etc. At the same time, linguistic units performing situational or usual expressive functions began to be identified with certain emotions (even the term "emotion words" appeared) (Wu & Zhang, 2020). In our case, it is interesting to trace how, in today's scientific or business discourse, individually created words with an emotional and figurative, expressive, or linguo-cultural (e.g., slang as a manifestation of subculture) connotation will function. We are prompted to do so by a contradiction: professional medical discourse must be officially business-like and not use expressive styles. The speech culture of a doctor (as well as a lawyer, a

banker, etc.) is an element and result of acquired professionalism and work experience. It excludes the possibility of individual manifestation of psyche and neurophysiology (gender, characterological, left- and right-lateral brain features). However, it is known that the pragmatics of medical work for professional purposes can modify the discourse, producing new meanings of words. For doctors, the main reasons for this phenomenon are the emergence of professional innovations (methods, tools), attempts to reassure, morally support the client, in doctor-doctor communication, the need for emotional optimization and euphemization of daily routine work and the avoidance of a refined emotionally neutral professional.

However, there are compelling external social reasons for innovative changes in the discourse and vocabulary of epidemiologists and physicians directly involved in the struggle against COVID-19.

The epidemiological discourse associated with the COVID-19 pandemic has become not only a phenomenon of medical deontology, but also a global metanarrative. The high level of concern in the regional and international community has made the political, ideological, cultural, and comparative study of contemporary epidemiological discourse relevant. Also, this discourse has become a context against which popular ideology, concepts, political stance, and social behavior can be comparatively investigated. According to East Asian scholars, this discourse has become a marker of the factual reliability and affective engagement of the world's media, a sharp difference between Eastern and Western mentalities. Also, the epidemiological discourse expressed in the media has evolved over the past two years from affective and predictive rhetoric - to more objective constructive and emotionally neutral (Yu et al., 2021). Therefore, studies of different periods of COVID discourse, comparative studies that feature language pictures of the problem in different countries of the world are now popular: USA China, Europe (Zeng & Xie, 2020).

Also for the completeness of the definition of the problem and its scope, let us recall that in the pages of scientific journals the epidemiological out-of-therapeutic COVID discourse is defined as a factor of national and globalization changes, a linguocultural phenomenon that covers the sphere of every language from the domestic to the institutional level (Prieto-Ramos et al., 2020). From these works we can conclude that not only the wordformation mechanisms of derivative nominations are important now, but also the politics, culture and ideology of creating neologisms in this sphere.In our opinion, medical epidemiological COVID discourse occupies an intermediate position in this respect: on the one hand, it corresponds to rather strict regulations of medical nomination and medication behavior, and on the other hand, due to its affectivity and resonance, the clear line between expressive colloquial and neutral professional speech of doctors is erased. Doctors, like ordinary people, are instinctively influenced by real or exaggerated levels of danger by social communication and statistical data. In our opinion, this reason, as well as the need for daily industrial euphemisms, contributes to the excessive connotation of COVID neologisms in the speech of doctors, which brings these neologisms closer to the common colloquial vocabulary.

Also surprising is the extent and rate at which COVID neologisms appear in all languages, most symptomatically in English. A. Saleh notes the importance of studying the pragmatic dimensions of the trend neologisms of the COVID-19 period: "lexicographers who monitor and correlate the volume of new definitions in dictionaries with social, political and economic events confirm: unlike previous world events linguistic changes at all levels" (Saleh, 2021, p. 24). In our opinion, in 2022 the determining factor is no longer the threat of life, but the disruption of communication, the need for social distance, social isolation, etc.

Against the background of the above factors, Ukrainian scientists have noticed that the more relevant factors in changing epidemiological discourse are not word-formation and nomenclatural, but pragmatic. This led to a convergence of professional medical and everyday patient discourses: "In a short time, medical terminology related to COVID-19 became clear and actively used, i.e., viral pneumonia, sanitation compliance, infection, protective mask, isolation, incubation period, rapid test, epidemic,quarantine (adaptive/rigid quarantine, weekend quarantine), contact (persons), coronavirus, coronavirus, coronavirus infection/disease, coronavirus disease, lethality, sanitary emergency/situation, observation, pandemic, PCR test, respiratory illness, saturation, antibody test, test (negative/positive), ALV (artificial lung ventilation), virus strain, etc. (Babeliuk & Didukh, 2020, p. 6).

We can conclude that epidemiological discourse is not a professional discourse, but it is rapidly developing, producing new narratives and lexical innovations. It has flooded the mass media content and therefore influenced almost all spheres of public life. At the same time, both sociocultural and neuropragmatic research into the evolution of epidemiological discourse remains relevant. The reasons for this evolution can be examined inductively by first examining the metamorphosis of professional medical sensitivity and its speech reflection.

# Neuropragmatic specificity of the creation, meaning and functioning of epidemiological discourse and COVID neologisms

In the speech of doctors who are not involved in the treatment of COVID patients, preventive and other activities, conotative meliorative lexemes are also present, but they emerged long ago, and the creation of neologisms is a non-productive process and is associated only with the emergence of denotative innovations. Taking this into account, we applied fragments of a comparative analysis of epidemiological and dental discourses, whose creators are in different neuropragmatic conditions.

The creation of secondary names of the lexico-semantic field "COVID-19" is almost always accompanied by connotation or generalization of rare, passive vocabulary, which instantly becomes active in both medicinal and everyday use. This indicates, in our opinion, two regularities:

1. The lines between professional and naive everyday perceptions of epidemiological hazards and the associated information and communication "boom" are being erased.

2. New neurolingual connections are quickly formed in native speakers, stimulated by circumstances and meanings important for life, regularly reinforced by means of individual, social and mass communication. Reinforced means fixed.

Doctors weaken their personal (subjective) professional defense mechanisms through a calm attitude to the facts of health disorders, patient deaths, etc. Deeper relic mechanisms come to the fore. The doctorprofessional, as an ordinary unprepared person for daily extreme and stressful activities, begins to worry about himself, his relatives. Doctorsepidemiologists are especially concerned, because they see the real scale of the pandemic, its dynamics and total threat. The affective attitude "I fear for family" myself/my generalizes to the attitude "Ι fear for everyone/society/world".Personal catastrophization, mass-communicative hyperbolization cause the opposite reaction - pejorative (disparaging or crude connotations) of the neologisms, the appearance of neologisms-labels, the implantation of epidemiological semantics in the meaning of lexemes not directly related to the pandemic or medical case: covidiot, coronophobia, corona, anticovid persons, covid paranoia, etc.

We also observe the expansion of the syntactics (lexical connectivity) of COVID neologisms, which indicates the growth of the volume of their potential meanings (extensional): covid bed, covid patient, covid ward, covid pneumonia, etc. If we compare such neologisms with other representatives of the lexical-semantic field "Infectious diseases" or "Epidemics," we see that they do not possess such semantic and connective properties. This is especially evident in discourse. Let us compare the sentence used by a doctor with a breach of professional ethics during a telephone conversation: Are you covid patient? How long have you been running a fever? Even if we ignore deontological norms, it is still difficult to imagine the sentence "Are you a tuberculosis patient?" in medical discourse. Such situations suggest a psychological acceptance of the phenomenon of the COVID-19 pandemic. As a consequence, a specific pragmatics of domestic and professional discourse emerges. The guideline justifying such violations is roughly: "COVID-19 is everywhere, and there is no reason to hide anything or to pick up sensitive names". It is clear that epidemiological discourse about tuberculosis, AIDS, and even influenza infections is more formal and gentle with the client, it tries to smooth over the status of the patient and by no means use "label words".

Eastern European researchers often try to explain the special status of COVID neologisms (the specificity of their emergence, the dynamics of transition to the common vocabulary, the presence of emotional coloring) only by extra-linguistic factors. For example, Slavic scholars Babeliuk and Didukh (2020) see the "affective power" of COVID neologisms in their "immanent influence, 'intermediality' and mass suggestibility. But individual scholars have made valuable generalizations about the specifics of epidemiological COVID discourse: "It should be noted that, unlike other human pandemic nominations such as Human Immunodeficiency Virus (HIV), Acquired Immune Deficiency Syndrome (AIDS), Spanish Flu (19), SARS (2002-2004), Swine Flu (2009) used in medical/epidemiological discourse, the term coronavirus, has suddenly emerged from epidemiological discourse.Within a few months it has firmly established itself not only in media discourse, but also in everyday speech. Such a leap in its use and change in the sphere of functioning can be explained by the globalization of the modern world and the much greater cohesion and contactivity of people around social networks than in the period of the swine flu in 2009. Today, everything that happens is instantly known and just as instantly relaved through social networks (Babelyuk & Didukh, 2020, p. 8). We agree with

linguists about the importance of the extra-psychic aspect, but they do not take into account the sensitivity and reactivity of the percipients themselves ordinary citizens and professionals who have professional skills of emotional stability. Let us try to achieve a relative completeness of the scientific picture of the studied subject by the following considerations.

We have noticed: the most frequent neologisms in medical epidemiological and therapeutic discourse are created by morphemic, lexicosemantic, abbreviation or combined (most often by morphemicabbreviation) methods and are used in short dialogic discourse. Such discourse is usually dynamic, tense, and involves extra-linguistic urgency decision-making, changing actions. Here are examples of sentences out of context: 1. I have one patient on the sheveele (AFL). 2.Decide to treat protocol, The department is already running out of covid beds. 3. How many outpatient covids (covid patients) do you have?

The pragmatics of the tense production situation requires maximum economy of linguistic resources, so neologisms-abbreviations or abbreviated slang analogues of terms complete the picture of truncated, non-propagated, and elided sentences: Do a flushka (photoroentgenography) for now, but tomorrow - PCR and - to me. We believe that conciseness, elementality, and sometimes implicitness of messages (lack of information is compensated by understanding the situation, nonverbal additions) is a separate marker of the neuropsychological and social tension of being a doctor in an environment of near-terminal situations or risks. These phenomena are well delineated in comparative comparisons with other medication discourses completely unrelated to risk, negative affect, or regular emotional tension.

For example, the pacing and measure of the explicitness, detail, and conotative register of epidemiological discourse, comparable to that of dental discourse, are diametrically opposed. The pragmatics of dental discourse is determined by quite different extra-linguistic stimuli (to reassure the client), which is reflected in many linguistic parameters. This includes the creation mechanisms and connotative semantics of common and newer professionalisms. Here is an example of a doctor's monologue to a client in a private dental clinic: We took your plate off, so if you take the picture now, we'll start dissecting the teeth today. Apparently, we will start sawing the seventh tooth. I don't think any depulpation will be necessary. Just so you know, it's a nerve extraction (the doctor smiles as he touches the patient). As we can see, the sentences seem to be detailed, and the expressive center is not neologisms, but positively, sometimes played-up connoted jargonisms (highlighted in bold italics), with which the author specifically replaces professionalisms and terms. The neurophysiological presupposition (in contrast to the discourse of COVID-contact medical professions) is not defense (negative incentive), but pleasure in the expected future profit (positive incentive).

Another differential characteristic of dental discourse is the avoidance of neologisms, since they a) interfere with the ease of "doctorpatient" communication; b) are mostly used in "doctor-doctor" communication and concern technological innovation. The latter is a frequent phenomenon in the dental field, but in intraprofessional communication it almost does not exhibit ameliorative connotations. We observe mostly abbreviations of terms, nomenclatures and trademarks to save speech, sometimes with connotations of colloquiality: seveeshka fiberglass pin, kateshka - computer tomogram, alvotros - alveolar protrusion, aplock - apex locator, etc. We can conclude that the derivation of words and sentences in medical discourse depends on psychological and even neurophysiological presuppositions, which (in the case of the epidemiologist-dentist contrast) exactly the opposite. The are psycholinguistic conative, affective laconic-dynamic of nature epidemiological discourse is determined by the objective increase in production tension in terminal or risky circumstances for the doctor and patient.

The above analysis has confirmed the psycho- and neurolinguistic mechanisms of the creation and use of neologisms in professional discourse. Scholars argue that such a mechanism (not word formation, but a deep, neurolinguistic one) is the result of speech, reflexive or behavioral feedback to verbal or situational stimuli (Ontko, 2005). Such stimuli are instantly and usually unconsciously evaluated by the speaker on the degree of acceptability of the reaction (consequence): positive - negative; safe - dangerous, advantageous - disadvantageous, etc.

This generalization correlates with recent neurolinguistic data. Thus, the Spanish scientists Hinojosa et al. (2019) studied the relation and mutual coordination of speech and emotions within the framework of affective neurolinguistics. They investigated deep mechanisms of emergence of a speech reaction to a situation and found out: if the situation, and hence the model of neurocognitive language processing, is expected, predictable (state in the understanding of professionals), then first the brain processes the denotative, factual plan of speech reflection. But, if the speaker is in a

domestic unpredictable and disordered environment and is placed in a spontaneous situation of abrupt change of conditions, their uncertainty or riskiness, the first to "turn on" are affective reflex mechanisms (Hinojosa et al., 2019, p. 813).

In an epidemiological environment, complicated by information hyperbolization and professional burnout, the epidemiologist or infectious disease doctor lacks the mental and nervous resources to maintain a professional social role and its corresponding deontological norms of professional discourse.Under such conditions, the doctor, like the average person, may unconsciously transition to lower affective registers, as any individual would in the event of danger or an accumulation of domestic discomfort or fatigue. This determines the nature of the derivation of words and sentences, as well as the emotional, evaluative, and expressive connotations of words, sentences, and discourse in general.

For factual clarity, we present two tables with innovative representations of epidemiological and stomatological discourse and demonstrate their fundamental difference by comparison (Tables 1 - 2). Let us note that the linguistic data given in the tables, their analysis and systemic representation belong to the authors of the article.

<b>Table 1</b> Neuropragmatic characteristics of neologisms and slang of dental medical
discourse

Dental neologisms and slang					
idiomatic	or literary	Connotation, affective association	Neuropragmatic characteristic		
combination 1.Babochka	correspondence Removable	Positive, casual.	Expectation of a positive		
	microprosthesis	Conversationality. Something pleasant.	result		
2.Bezmet	Metal-free ceramic crown	Neutrality.	Saving speech resources.		
3.Plomba	A filling in the discourse of advanced dentists	Ironic, something out of the ordinary.	Neglecting the elementary, expecting the larger and more profitable.		
4.Hirlyanda	Inner metal strip on all-metal crowns	Positive, aesthetic, something beautiful	Optimization of the working atmosphere, expectation of improved mood		

5.Kofer	Rubber dam, a	Exotic, something	Not expressed
	thin dental	new and unusual.	
	isolation dam		
6.Mostik	Bridge prosthesis	Positive, casual	Optimization of
(mistochok)		Conversational.	atmosphere, expectation
		Something pleasant.	of commitment to the
			client
7.Rezortsynł	Resorcin-formalin	Talkative, casual	Optimization of
	paste		atmosphere
8.Triyka	Tooth numbering	Familiarity, neutrality	Not expressed
(triyochka)			-
9.Panorama	Panoramic dental	Neutrality. Something	Cultivation of a festive
	X-ray	large-scale, significant	atmosphere, decorations
10.Shurup	Implant	Irony, something	Expectation of
_		elementary.	simplification of
			complicated procedure

Source: Author's own conception

**Table 2.** Neuropragmatic characteristics of neologisms and slang of epidemiological discourse

Epidemiological neologisms and slang of the semantic group KOVID-19			
Lexeme or idiomatic	Denotative	Connotation,	Neuropragmatic
combination	meaning or	affective association	characteristic
	literary		
	correspondence		
1.Antyvaktsynator	An opponent of	Neutral, who is	Expectation of
1.7 they varies ynator	vaccination,	bad.	resistance, negativity,
	promoting his		negative incentive
	position		
2.Antyhen	Foreign protein,	Neutral, something	Denial of something
2.7 mtynem	agent	small but dangerous	fundamental
3.Kovidnyy	Relates to	Neutral.	Maximum broad
5.KOvidityy	COVID-19	Connotation with	signifier, may be a sign
		danger.	of something
4.Obovyazkova	Preventive	Negative	Negative stimulus:
	measure.	connotation,	restriction of freedom,
		forcing limitations.	means danger
5.Perekarantynyty	Being	Neutrality, loss of	Inappropriate restriction

	1	something important	of freedom
6.Sars	Sars-CoV-2. A new strain of corona virus	Exoticism, suspiciousness	Affects as reaction to uncertainty, incomprehensible danger
7.Sertyfikat	Document	Neutrality, coercive to the regime	
8.Sotsial'na dystantsiya	Safe to stay in the community	Neutrality, tension, coercion to the regime	Expectation of restrictions, regulations
9.Superposhyryuvach	infecting large	Negative connotation, something big and dangerous	Expectation of excessive destructive force.
10. Unervona zona	people Highest incidence area	something	Unconditional (archetypal) symbol of danger, expectation of danger

Source: Author's own conception

The tables will summarize the main results of the semantic, associative, neuropragmatic and comparative analysis of neologisms and slang of the lexical-semantic group COVID-19 of the semantic field "Epidemiology" as well as individual innovative units of the semantic field "Dentistry". One can clearly trace the opposite of pragmatic stimuli (expectations of a practical result), the presence of numerous potential destructive associations of COVID neologisms and the practical absence of any associations in dental nominations. The opposite of connotations is observed: negative or neutral (epidemiology) - positive, colloquial or neutral (absent) (dentistry). Protective mechanisms of the psyche tend to represent elements of the concepts death, danger, captivity, totality, negation (COVID and comfort, calmness, protection, goodwill (stomatological neologisms) neologisms) as associations. We can also see the distinction of neuropragmatic admonitions in the form of opposite expectations (stimuli): negative (uncertainty, struggle, possibility to fall ill) and (expectations of earnings, reliability in life) respectively.

### Conclusion

We have noticed different degrees of control of affect and professional behavior, which can affect the doctor's discourse, its clarity (regimentality) or blurring (approaching a conversational style with lowregister emotions). Each specialist professionally develops or blunts sensitivity to the objects and situations with which he or she works (depending on the specifics of the medical profession). Professional sensitivity and reactivity are selective. For example, a resuscitator may relatively calmly tolerate the death of a patient, but quickly react to the crying of his or her child. The universal neurophysiological mechanisms that react to destructive situations (danger, survival, death) in medical professionals are usually under professional control. However, the unconscious evaluation of the situation is always present.

Because of the doctor's (as well as any other person's) usual needs for personal safety and a comfortable professional environment, he or she has a constant, usually unconscious, evaluation of the surrounding situation. Evaluation produces attitudes, and attitudes produce emotions. Emotions require expression, so most of the secondary connotative names refer to work (heavy - light), to industrial comfort (available - absent), to the surrounding staff (sympathy - neutrality - antipathy). Therefore, industrial nonindustrial communication between doctors and is full of professionalisms. slang. diminutives. situational neologisms. and conversational types of sentence structure. In standard situations, these phenomena are neutral, casual, or positively colored.

The affective reactions that arise when a doctor's work situation changes are weak and professionally restrained, but they immediately move the discourse into a business emotional-neutral register with only nomenclatural neologisms.

The doctor-epidemiologist often finds himself in an emergency situation or is in a state of prolonged stress (stress, exhaustion, burnout), so the reflexive control of the linguistic component of medical etiquette is weakened. The discourse approaches the colloquial one, and idiostylistic situational neologisms (word usage) and lexemes with negative or colloquial connotations appear. And this can occur in "doctor-doctor" and "doctorpatient" communication. It is the latter tendency that we observe in doctors who regularly deal with COVID-infected people.

We believe that the excessive connotative labeling and implicit nature of epidemiological neoplasms, which approach all the features of creation and functioning to conversational and everyday ones, can be compared to an affectively conditioned defect (or effect), a professional discursive disorder. This type of professional doctor's discourse disorder (together with other varieties) has been described and analyzed against the background of selected Asian countries (Juraev, 2021). Such professional discursive disorders are characteristic of professionals living and working in marginalized or isolated regions, or of doctors representing a highly colorful authentic ethnicity that contrasts with European notions of the doctor's speech culture. This indicates a weakening of personal and group identity under the pressure of threatening circumstances

In addition to these neuropragmatic patterns of stratification of medication discourses, we drew some important partial conclusions as we noticed:

1. Excessive use of limited number of word-forming elements of the lexical-semantic group COVID-19: *Covid-drug, COVID-vaccine, COVID-hospitalization, COVID-hospital, COVID-test, COVID-passport, "COVID-passport; action"*, etc.

2. Total expansion of the extensional (concept volume) of the most used lexical units: *covid (period, status, regime, department, patient*, etc.)

3. the majority of COVID neologisms in the denotative meaning contain core semes: *disease, danger, mass: pandemic, uncertainty: covicide, omicron, delta, oxygen addiction, new strain*, etc.

4. Negative (rarely neutral or colloquial: covidka (COVID), peerelka (PCR) connotation or possible association.

5. The direct or hidden (secondary) name of objects, phenomena, and circumstances that perform a neuropragmatic (reflexive, instinctive, and protective, often unconscious) role of negative stimuli.

6. Generalization of linguistic units, previously available in the passive fund of medical vocabulary, but never heard of by ordinary citizens. Now it has become both active professional and common colloquial vocabulary or phraseology: *PCR test, marker symptoms, oxygen concentrators, saturation, antigen, booster dose.* 

7. Alignment of intraprofessional medical and domestic and mass discourses through a borderline (terminal, vital) global extra-linguistic situation. It makes both doctors and ordinary citizens "equal" before infectious, neurotic (experience, burnout, stress, lingering affect) and socioeconomic dangers.

8. Highlighting among COVID neologisms a layer of vocabulary with a generalized meaning, which is used mainly by epidemiologists rather than other doctors struggling with the epidemic: *lockdown*, COVID-

passportation, COVID-disclosure, mandatory self-isolation, antivaccinators, vaccine second wave, superdistributor, COVID-status of the region, etc.

Consequently, epidemiological discourse is not a professional discourse. It has become massive and rapidly evolving, and epidemiological "covid-neologisms" were formed in a short time and are rapidly forming even now. This testifies to the neuropragmatic (affective, instinctive (instinct of preservation, highly organized defense of the psyche) presupposition of their emergence).

### Limitation of the study

The study was conducted on an unrepresentative sample, and therefore only demonstrates the basic patterns of creation, semantics and neuropragmatic significance of secondary names of epidemiological discourse. In fact, the chosen topic is so voluminous and topical that it requires a large-scale lexicographic collection of COVID formations and the organization of field and targeted sociological expeditions to collect samples of living epidemiological discourse. Also, the authors did not have sufficient time, human resources and sufficient data for a full and exhaustive analysis of the relevant units.

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### References

- Akhutina, T. V., & Glozman, J. M. (1995). The neurolinguistic study of semantics. *Aphasiology*, 9(2), 143-152. <u>https://doi.org/10.1080/02687039508248701</u>
- Babeliuk, O. A., & Didukh, L. I. (2020). Sposoby tvorennia neolohizmiv na poznachennia yavyshch COVID-19 v anhlomovnomu epidemiolohichnomu dyskursi [Ways of COVID-19 neologisms word-formation in English epidemiological

discourse]. *Lviv Philological Journal*, 7, 5-12. https://journal.ldubgd.edu.ua/index.php/philology/article/view/1809

- Berbets, T., Berbets, V., Babii, I., Chyrva, O., Malykhin, A., Sushentseva, L., Medynskii, S., Riaboshapka, O., Matviichuk, T., Solovyov, V., Maksymchuk, I., & Maksymchuk, B. (2021). Developing independent creativity in pupils: Neuroscientific discourse and ukraine's experience. BRAIN. Broad Research in Artificial Intelligence and Neuroscience, 12(4), 314-328. https://doi.org/10.18662/brain/12.4/252
- Demchenko, I., Maksymchuk, B., Bilan, V., Maksymchuk, I., & Kalynovska, I. (2021). Training future physical education teachers for professional activities under the conditions of inclusive education. BRAIN. Broad Research in Artificial Intelligence and Neuroscience, 12(3), 191-213. https://doi.org/10.18662/brain/12.3/227
- Hinojosa, J. A., Moreno, E. M., & Ferré, P. (2019). Affective neurolinguistics: Towards a framework for reconciling language and emotion. *Language, Cognition and Neuroscience, 35*(7), 813-839 https://doi.org/10.1080/23273798.2019.1620957
- Juraev, A. K. (2021). Discourse competence in the professional activities of doctors. *Central Asian Journal of Medicine*, *1*. <u>https://uzjournals.edu.uz/tma/vol2021/iss1/9</u>
- Karasievych, S., Maksymchuk, B., Kuzmenko, V., Slyusarenko, N., Romanyshyna, O., Syvokhop, E., Kolomiitseva, O., Romanishyna, L., Marionda, I., Vykhrushch, V., Oliinyk, M., Kovalchuk, A., Halaidiuk, M., & Maksymchuk, I. (2021). Training future physical education teachers for physical and sports activities: Neuropedagogical approach. BRAIN. Broad Research in Artificial Intelligence and Neuroscience, 12(4), 543-564. https://doi.org/10.18662/brain/12.4/264
- Kharchenko, S. V. (2020). Novotvory periodu koronavirusnoi pandemii v mediinomu prostori Ukrainy [Innovations of the coronavirus pandemic period in the media space of Ukraine]. International Philological Journal, 4, 104-110. <u>https://dx.doi.org/10.31548/philolog2020.04.104</u>
- Khoda, L. D. (2020). Mova reklamy v chasy pandemii koronavirusu Covid-19 (na materiali ukrainskykh ta slovatskykh tekstiv [The language of advertising during the Covid-19 coronavirus pandemic (based on Ukrainian and Slovak texts)]. Pivdennyy Arkhyv (Filolohichni Nauky) [Southern Archive (Philological Sciences)], LXXXII, 130-135. https://zum.onu.edu.ua/article/view/235534/238299
- Kosholap, A., Maksymchuk, B., Branitska, T., Martynets, L., Boichenko, A.,
  Stoliarenko, O., Matsuk, L., Surovov, O., Stoliarenko, O., & Maksymchuk,
  I. (2021). Neuropsychological bases of self-improvement of own physical health of future teachers in the course of university education. *BRAIN*.

Broad Research in Artificial Intelligence and Neuroscience, 12(3), 171-190. https://doi.org/10.18662/brain/12.3/226

- Ontko, E. K. (2005). Neurolinguistic analysis of neologisms in reading. https://hi.booksc.org/dl/13304941/2c9b26
- Pitts, E., Bhatnagar, S. C., Buckingham, H. W., Hacein-Bey, L., & Bhatnagar, G. (2010). A unique modality-specific domain for the production of neologisms: Recurrent perseveration and oral reading. *Aphasiology*, 24(3), 348-362. <u>https://doi.org/10.1080/02687030802662133</u>
- Prieto-Ramos, F., Pei, J., & Cheng, L. (2020). Institutional and news media denominations of COVID-19 and its causative virus: Between naming policies and naming politics. *Discourse and Communication*, 14(6), 635–652. <u>https://doi.org/10.1177/1750481320938467</u>
- Prots, R., Yakovliv, V., Medynskyi, S., Kharchenko, R., Hryb, T., Klymenchenko, T., Ihnatenko, S., Buzhyna, I., & Maksymchuk, B. (2021). Psychophysical training of young people for homeland defence using means of physical culture and sports. BRAIN. Broad Research in Artificial Intelligence and Neuroscience, 12(3), 149-171. https://doi.org/10.18662/brain/12.3/225
- Saleh, A. S. (2021). COVID-19 trending neologisms and word formation processes in English. Russian Journal of Linguistics, 25(1), 24-42. <u>https://cyberleninka.ru/article/n/covid-19-trending-neologisms-andword-formation-processes-in-english</u>
- Sarancha, I., Maksymchuk, B., Gordiichuk, G., Berbets, T., Berbets, V., Chepurna, L., Golub, V., Chernichenko, L., Behas, L., Roienko, S., Bezliudna, N., Rassskazova, O., & Maksymchuk, I. (2021). Neuroscientific principles in labour adaptation of people with musculoskeletal disorders. BRAIN. Broad Research in Artificial Intelligence and Neuroscience, 12(4), 206-223. https://doi.org/10.18662/brain/12.4/245
- Schiller, N. O., & Lieber, R. (2020). Neurolinguistic approaches in morphology. Oxford Research Encyclopedia, Linguistics, 1-23. doi:10.1093/acrefore/9780199384655.013.601
- Schiller, N. O., Verdonschot, R. G., Audring, J., & Masini, F. (2019). Morphological theory and neurolinguistics. In Oxford bandbooks series (pp. 554-572). <u>https://hdl.handle.net/1887/3151578</u>
- Semenza, C., & Mondini, S. (2006). Neuropsychology of compound words. In G Libben & G. Jarema (Eds.), *The Representation and processing of compound words* (pp. 71-95). Oxford: Oxford University Press. <u>https://doi.org/10.1093/acprof:oso/9780199228911.003.0004</u>
- Stanca, I., & Tarbujaru, T. (2022). Crisis management: What COVID-19 taught the world. Logos Universality Mentality Education Novelty: Economics & Administrative Sciences, 7(1), 01-18. <u>https://doi.org/10.18662/lumeneas/7.1/32</u>

- Tymoshchuk, N. (2021). Neolohizmy na poznachennya yanyshch COVID-19: morfolohichnyy aspekt. Aktual ni pytannya humanitarnykh nauk [A neologism for the designation of COVID-19 phenomena: A morphological aspect]. Current Issues in the Humanities, 35(5), 168-172. https://ir.vtei.edu.ua/card.php?lang=en&id=27146
- Vesna, T. V., & Teletska, T. V. (2020). Leksychni innovatsii periodu koronavirusnoi pandemii [Lexical innovations of the coronavirus pandemic period]. Notes in Romance-Germanic Philology, 1(44), 82-89. <u>https://doi.org/10.18524/2307-4604.2020.1(44).210998</u>
- Wu, C., & Zhang, J. (2020). Emotion word type should be incorporated in affective neurolinguistics: A commentary on Hinojosa, Moreno and Ferré (2019). *Language, Cognition and Neuroscience*, 35(7), 840-843 <u>https://doi.org/10.1080/23273798.2019.1696979</u>
- Yu, H., Lu, H., & Hu, J. (2021). A corpus-based critical discourse analysis of news reports on the COVID-19 pandemic in China and the UK. *International Journal of English Linguistics*, 11(2), 36-45. https://doi.org/10.5539/ijel.v11n2p36
- Zavodna, L. (2019). Neolohizmy, vynyknennia yakykh zumovleno suchasnymy modernizatsiinymy protsesamy u vitchyznianii osviti [Neologisms, the emergence of which is caused by modern modernization processes in domestic education]. A New Pedagogical Idea, 4, 96–100. http://npd.roippo.org.ua/index.php/NPD/issue/view/2/3
- Zeng, Y., & Xie, T. (2020). Comparative study on news reports of COVID-19 between China and the United States. *Journal of Mudanjiang University*, 29(09), 77-80. <u>https://doi=10.15907/j.cnki.23-1450.2020.09.017</u>