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ACTUAL PROBLEMS OF THE DEEP LEARNING METHOD IN LINGUAL PERSONALITY MODELING

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Abstract

Background: The relevance of our research, above all, is theoretically motivated by the development of extraordinary scientific and practical interest in the possibilities of language processing of huge amount of data generated by people in everyday professional and personal life in the electronic forms of communication. Linguopersonology is a new research area for modeling particular linguistic personality.

Purpose: The purpose of the article is to clarify the essence of the method of deep learning, to describe the known and potential obstacles to the applying of that method to the linguistic data; and to analyze existing and perspective approaches to their overcoming.

Results: Amount of training data, dealing with new data, fuzzy and syncretic data, ignoring hierarchical language and speech structure and linguistic knowledge are main DL problems.

Discussion: One way to deal with DL problems is spontaneous unsupervised learning, representing data in the form of movies, and building systems, which are capable to choose and achieve goals. Another way is building hybrid DL systems, which use previous and some linguistic data.

Keywords: linguopersonology, linguistic personality, deep learning, artificial neural network.

Vitae

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Олена Карпіна

LINGUO-PSYCHOLOGICAL MODEL OF DEPRESSIVE PERSONALITY

Зроблено спробу лінгвістичної інтерпретації психологічного змісту депресії на лексикографічному рівні з метою з'ясування подібностей і розбіжностей між психологічним трактуванням цього стану та його мовним наповненням у тлумачних словниках сучасної англійської мови. Розмежовано поняття депресивна акцентуація й депресивний стан, а також виявлено відповідні семантичні компоненти в структурі словникових дефініцій.

Ключові слова: афект, депресивний стан, депресивна акцентуація, депресивна особистість, емоційний стан, сема, семантичний компонент, словникова дефініція.

Fundamental changes in the domain of XXIst c. linguistics led to the shift of the research vector from the language to its bearer. It involves the achievements of other sciences, introducing new terms and notions to characterize the language and its functioning (Kubriakova 4). Speech activity is complex in its structure, being subject to different factors and motives that arise from the human being, outlining the range of dependent phenomena.

The relevance of the research is justified by the increased interest in the emotional states the individual is in, their consequences and influence on the process of communication. Recently, much research has been conducted in the field of linguistics of emotions. Scientific investigations of O. Ye. Filimonova, Yu. Kristeva, V. I. Shakhovskii, H. I. Kharkevych, O. Borisov, E. L. Nosenko, N. P. Kyseliuk, N. A. Melnychuk, Ya. Bondarenko, L. Koziarevych and others are devoted to the study of emotional states.

The article is aimed at the defining the degree of correlation between the psychological model of a depressed state and its linguistic content, listed in the definitions of modern English dictionaries.

The theoretical basis of the research is made up by the investigations of H. Kharkevych, P. Kutter, N. McWilliams, K. Leonhard, A. M. Sprints, P. Gannushkin, E. V. Geisler, et al.

The structure of the personality consists of the individual type, the kind of primal trauma and the way of response to stressful situations (Geisler). Depressive characterological constitution is singled out in a separate individual type by many authors (McWilliams, Leonhard, Kutter). According to K. Leonhard, if the character traits assume an excessive distinctiveness, such manifestations can be considered as accentuation. At this stage of development it does not occur as pathology and can find a positive application, contributing to personal development (Leonhard 6). Despite the internal conflict, depressed people provoke general admiration and esteem. They are usually generous, sensitive and patient to other people's drawbacks. People with the depressive dynamics are endowed with a great and sincere ability to love and self-sacrificing attitude (McWilliams).

Thus, people whose individual type is defined as depressive (dysthymic in K. Leonhard's typology) tend to experience negative emotions to a greater extent than positive ones. They are able to focus on negative events that contribute to re-experiencing grief. Depressive individuals are marked by an excessive response to minimal external stimuli, subject to sharp changes in sentiment (Geisler). Caused by early frustrations, this type of personality is distinguished by specific emotional manifestations and an extensive symptomatology revealed in physiological disturbances and behavioural reactions.

Considering the type of accentuation, we should differentiate between the depressive personality itself, and the individual in the depressed state. When the character traits turn into painful symptoms, it signalises about the depressed state, which, depending on the type, differs in intensity of the devastating consequences (McWilliams). Since the depressive character traits predetermine the emergence of the depressed state, in the given study, we will apply the term *depressive personality* (hereinafter – DP) with regard to both: an individual in depression (who does not necessarily belong to the depressive type, but is only subject to unfavourable circumstances) and a representative of the depressive individual type.

In order to find out the degree of correlation between DP modelled by psychologists, and DP whose emotional and behavioural manifestations are verbalized in the domain of English vocabulary, we have compared the lexical representation of depression in contemporary English dictionaries with the psychological content of this state. In our research we analysed the dictionary definitions of the lexeme *depression* listed in six dictionaries that are characterised by the high level of informative value: Collins English Dictionary (CED), Cambridge Advanced Learner's Dictionary (CALD), English Oxford Living Dictionary (EOLD), Longman Dictionary of Contemporary English (LDCE), Merriam-Webster Collegiate Dictionary (MWCD), Oxford Advanced Learner's Dictionary (OALD).

At this stage of the study we have pointed out common features and certain differences between psychological and linguistic content of DP. The destructive effect of traumatic factors arouses emotional reactions varying in duration and intensity, which in terms of psychology are known as *affects* (Geisler, Mc Williams, et al.). The psychologists particularize *guilt* and *sadness* as primary emotional manifestations of depression. The specificity of guilt lies in its ability to transform from the psychogenetic factor – the real fault of the DP for the wrongdoing, into a long-lasting effect of "guilt feeling" – the subconscious conviction in their own imperfection, which results in social rejection.

1. **Guilt is an unhappy feeling** *that you have because you have done something wrong or think that you have done something wrong.*

2. **Guilt is the fact** *that you have done something wrong or illegal* (CED).

The guilt of DP is boundless (McWilliams). It leads to an extreme self-depreciation: they identify themselves incapable of anything, deserving of nothing but reproach and moral condemnation. Depressive people often overcome their unconscious dynamics by providing a philanthropic activity that enables them to withstand their guilt. Many individuals with the depressive characterological constitution restore the sense of self-esteem and avoid depressive episodes by doing good.

However, being transferred onto the semantics of contemporary English, the affect of "guilt feeling" partially loses its significance: the semantic component *guilt* has a limited representation in dictionary definitions of the lexeme *depression*, being listed only in one out of six dictionaries:

Depression *is a mental condition characterized by feelings of severe despondency and dejection, typically also with feelings of inadequacy and* **guilt,** *often accompanied by lack of energy and disturbance of appetite and sleep* (EOLD).

According to I. A. Sternin, semantic components put at the beginning of the definition are of particular importance (Sternin 9). Sharing this linguistic assumption, we can refer the lexeme *guilt* to the periphery of the semantic space of the notion *depression*. The validity of this decision is confirmed by the results of the inventory of the nouns forming the lexico-semantic group *depression:* the lexeme *guilt* does not demonstrate synonymic relations with the lexeme *depression* in the analysed thesauri (Karpina).

A clear representation of the close correlation between the psychological diagnostics of DP and the semantic components, included in the dictionary definitions, is demonstrated by the components of meaning united by the seme *sadness*. Sadness is so obvious in the emotional experience of a person suffering from depression that these words (i. e. *sadness* and *depression*) often appear as synonyms (McWilliams). Sadness is an integral part of the semantic structure of the lexeme *depression* in all analysed dictionary definitions presented not only lexically, as a lexeme *sadness* and its derivatives, but also at the level of semantics, interpreting such lexemes as *dejection, despondency, unhappiness* etc.:

Depression *is a mental state in which you are* **sad** *and feel that you cannot enjoy anything, because your situation is so difficult and unpleasant* (CED).

Unhappiness *is the feeling of not being happy;* **sadness** (EOLD).

The affective sphere of the depressed state also includes *anxiety*, ranging from mild inner tension to panic (Sprints 88–89). The semantic reflection of this emotional state is manifested in the lexemes united by the seme *anxiety:*

Depression *is a medical condition that makes you very unhappy and* **anxious** *and often prevents you from living a normal life* (LDCE).

The anxiety of DP is associated with the sense of inevitable disaster, an ambiguous menace expecting for them in future. It is verified both at the level of the semantics of the lexeme *anxiety* and in the components incorporated in the semantic structure of the lexeme *despondency*:

Despondency *– low spirits from* **loss of hope or courage;** *dejection* (EOLD).

Physiological disorders of individuals in the state of depression are represented by the semantic components which denote such depressive symptoms as *sleep and appetite disorders: disturbance of appetite and sleep* (EOLD), *increase or decrease of appetite and sleep* (MWCD); *being unable to sleep* (OALD).

Apathy, poor working capacity, inability to concentrate thoughts are also the signs related to a person in the state of depression. This considerable mental and physical fatigability, the inability to focus on the usual work was called *asthenia* (Sprints 89). The essence of asthenia is revealed in the following semantic components: *inactivity* (MWCD), *difficulty in thinking and concentration* (MWCD), *inability to concentrate* (CED), *lack of energy* (EOLD) etc.

The functional disturbance of depressed individuals is also reflected in the lexical units that convey the inability to live and enjoy life, as well as the semantic components with uncertain semantic content *inadequacy*:

Depression *is a mental condition characterized by feelings of severe despondency and dejection, usually also with feelings of* **inadequacy** *and guilt, often accompanied by lack of energy and disturbances in appetite and sleep* (EOLD).

Depression *is a mental illness in which a person is very unhappy and anxious (= worried and nervous) for long periods and* **cannot have a normal life** *during these periods* (CALD).

The notion of reactivity of depression includes external and internal factors that caused the corresponding condition. In general, depression is considered one of the most common reactive states (Gannushkin). Although only a neurotic type of depression is assumed as situational, psychotic depression involves the preoccupation of DP with an early stage of child development when some frustration (loss) probably took place (oral stage). This specific idea has no clear correspondence in the semantic space of the depressive complex. However, we can trace the causality related to the current depressing situation and the lack of hope for its improvement:

Depression *is a mental state in which you are sad and feel that you cannot enjoy anything,* **because your situation is so difficult and unpleasant** (CED).

Depression *is the state of feeling very unhappy and* **without hope for the future** (CALD).

It should be noted that some semantic components of the definitions of depression demonstrate the causality being filtered through the corresponding dictionary definitions:

Dejection *is a feeling of sadness that you get, for example,* **when you have just been disappointed by something** (CED).

The course of depression may be distinguished by latent affective symptoms. The essence of this phenomenon lies in the masking of the actual depressive symptoms under the general somatic complaints, being not confirmed in actual fact (Sprints 89–90). This type of depression, which is also called *masked,* differs from its standard version: anxiety and internal desolation provoke anger that seeks for an outward expression. Such a personality may be disposed towards verbal and non-verbal aggression: they may have a desire to shout at someone or to break something. The essence of this phenomenon is demonstrated in the semantic component *psychoneurotic* declared in one of the dictionaries, according to which depression is classified as a type of neuroses caused by suppression of emotional states revealed in hidden forms or symptoms:

Depression *is a* **psychoneurotic** *or psychotic disorder characterized by sadness, inactivity, difficulty in thinking and concentration, a significant increase or decrease in appetite and time spent sleeping, feelings of dejection and hopelessness, and sometimes suicidal tendencies* (MWCD).

Psychoneurosis *neurosis is based on an emotional conflict in which an impulse that has been blocked seeks expression* **in a disguised response or symptom** (MWCD).

Psychotic depression is characterized by intensity and duration of symptoms. The destructive state of mind transforms into intolerable depressive pain and leads to a conscious desire to commit suicide taking the form of an obsessive longing for death (depressia.info. Web. 22 March 2018.). This extreme manifestation of the depressed state is often called an act of self-aggression being embodied in the component of meaning *suicidal tendencies*. Thus, it was suggested only in a single dictionary.

The phase character of depression, its longness and intensity are reflected in the semantic components *long periods*, *greater and more prolonged*, *severe* etc.:

Depression is a mental illness in which a person is very unhappy and anxious (= worried and nervous) **for long periods** and cannot have a normal life **during these periods** (CALD).

We should pay attention to the fact that not all the points declared in psychological sources have consistent correspondences in the lexical system of English. This can be explained by the fact that no lexical unit, including *depression*, is able to render the symbiosis of emotional states and the variety of signs and causes that constitute the depression complex. Thus, the lexico-semantic analysis of the lexeme *depression* and the lexemes used for its interpretation has not reflected the mechanisms of protection of DP such as *introjection* and *encapsulation*. McWilliams defines *introjection* as a subconscious internalization of the most hated qualities of the lost objects of love. *Encapsulation* is the alienation in order to preserve self-esteem (Kutter).
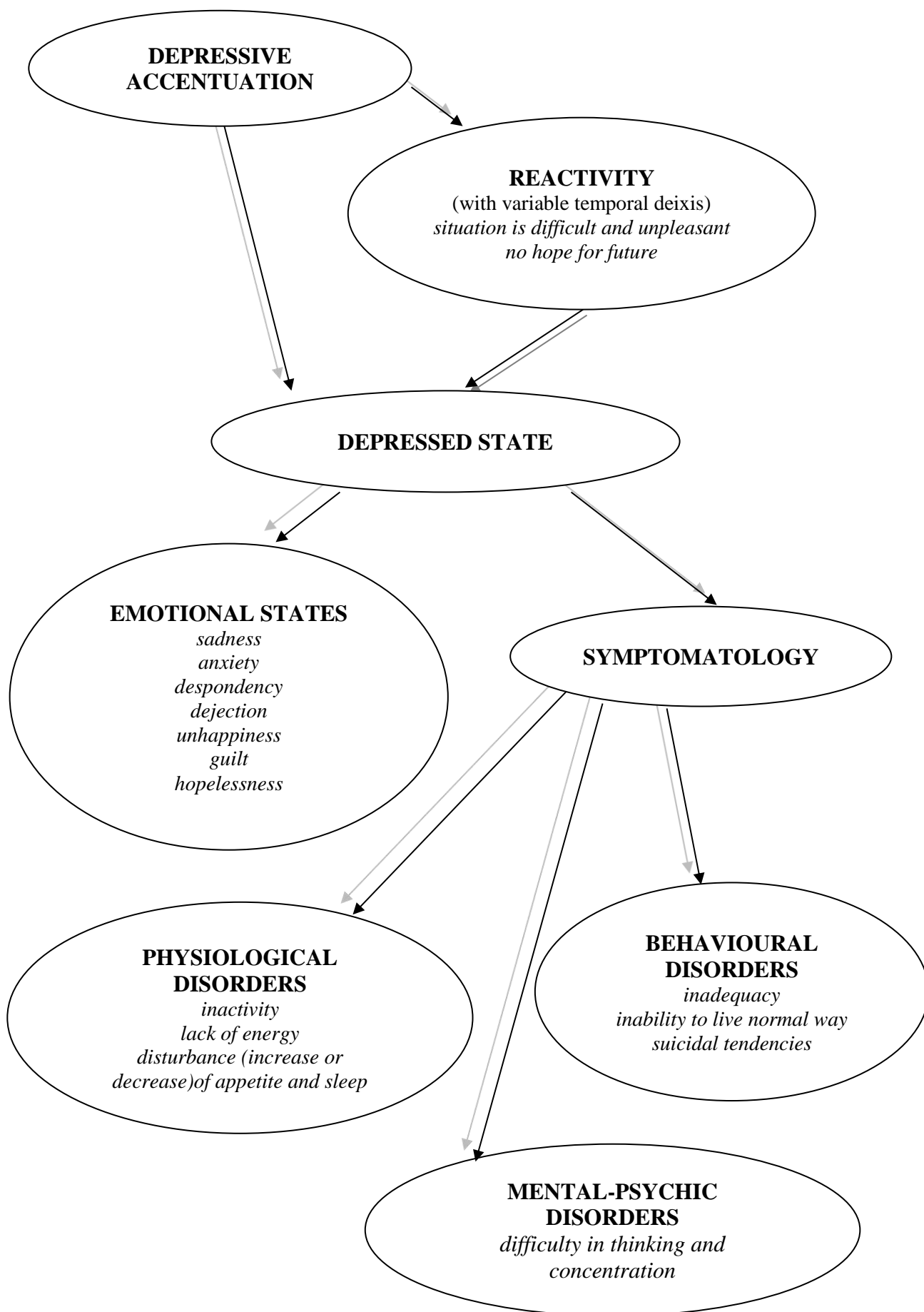
In conclusion, the involvement of the results of psychological research demonstrates a partial-complete compliance at the linguistic level which made it possible to construct a linguo-psychological model of DP (Scheme 1). The preconditions of the depressed state are determined by the type of individual defined as *depressive accentuation*. The individuals belonging to this type are inclined to experience negative emotions such as sadness, guilt, anxiety, despondency, dejection etc. The depressive accentuation is associated with the idea of *reactivity* that implies an extensive individual reaction to minimal external distractions. The latter may possibly vary in time: DPs are not satisfied with current situation, they may also be disturbed by the negative events of the past. The reactivity of the depressive individuals is also marked by hopelessness concerning the doubtful improvement of the life circumstances.

According to H. Kharkevych, any emotional state may be represented by physiological, mental-psychic and behavioural manifestations (Kharkevych). In case of depression we deal with a wide-range complex of emotional states among which the emotional state of sadness and related to it emotional states of despondency and dejection form the basis of the whole complex. It is confirmed by the semantic components suggested by all the analysed dictionaries. As for the *physiological manifestations* they are mostly related to the disturbances of sleep and appetite. *Mental-psychic manifestations* explain the essence of the notion *asthenia,* which involves a broad mental weariness and inhibition of thought and concentration. And, finally, behavioural manifestations demonstrate the outward expression of the depressive behaviour which is disclosed by means of semantic components *inadequacy, inability to live normal way,* and *suicidal tendencies.*

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Scheme 1

Linguo-Psychological Model of Depressive Personality

DEPRESSIVE ACCENTUATION

REACTIVITY
(with variable temporal deixis)
situation is difficult and unpleasant
no hope for future

DEPRESSED STATE

EMOTIONAL STATES
sadness
anxiety
despondency
dejection
unhappiness
guilt
hopelessness

SYMPTOMATOLOGY

PHYSIOLOGICAL DISORDERS
inactivity
lack of energy
disturbance (increase or decrease)of appetite and sleep

BEHAVIOURAL DISORDERS
inadequacy
inability to live normal way
suicidal tendencies

MENTAL-PSYCHIC DISORDERS
difficulty in thinking and concentration

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List of Abbreviations

CALD – *Cambridge Advanced Learner's Dictionary*
CED – *Collins English Dictionary*
DP – *Depressive Personality*
EOLD – *English Oxford Living Dictionary*
LDCE – *Longman Dictionary of Contemporary English*
MWCD –*Merriam-Webster Collegiate Dictionary*
OALD – *Oxford Advanced Learner's Dictionary*

LINGUO-PSYCHOLOGICAL MODEL OF DEPRESSIVE PERSONALITY

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Abstract

Background: The radical change of the language paradigms implies the involvement of the achievements of other sciences, introducing new terms and notions in characterization of the language and its functioning. An increased interest in the emotional states of an individual is explained by their consequences and influence on the process of communication.

Purpose: The article is aimed at defining the degree of correlation between the psychological model of a depressed state with its linguistic content, reflected in the definitions of modern English dictionaries.

Results: The psychological diagnostics of a depressive personality and the semantic components included in the vocabulary definitions demonstrate a close correlation which is traced in the components of meaning, united in the semes *sadness* and *anxiety*.

Discussion: Linguo-psychological model of depressive personality is based on the psychological model of the depressed state, reproduced on the basis of the analysis of psychological literature and specified by the linguistic content of the notion *depression* reflected in the dictionaries of contemporary English.

We differentiate between the notions of a depressive accentuation and a depressed state, pointing out the semantic components that indicate both the features of the depressive disposition and the signs of the depressed state.

The components included in the semantic structure of the lexeme *depression* are divided into two sectors: emotional states and symptomatology. The symptomatology is represented by three types of manifestation: physiological, mental-psychic, and behavioural.

Key words: affect, depressed state, depressive accentuation, depressive personality, dictionary definition, emotional state, lexeme, semantic component, seme.

Vitae

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