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Linguistic Disorders in Alcohol Dependence – in Search of Methodology

SUMMARY

Alcohol dependence is the chronic disease which damages many systems and organs. The toxic influence of alcohol on the central nervous system leads to durable numbers and size reduction of neurons and neural connections, especially within the frontal structures, the limbic system and the cerebellum. These changes have the consequence in cognitive impairments including executive cognitive impairments and memory deficits and emotional information processing disorder. Cognitive deficits, in turn, affect the way of understanding human reality and the opportunity to represent it in the language behavior. Diagnosis of speech disorders in the persons depended on alcohol can be accomplished by evaluating the narrative skills that reflect the knowledge of the world included in the human mind, what is more – the way of cognitive world representation.

The article is an innovative (on the ground of logopedia) attempt to define the research methodology, that will allow to describe the language disorder in alcoholism.

Key words: alcoholism, cognitive functions, executive cognitive functions, cognitive impairments, language impairments in alcoholism, narrative skills

ALCOHOLISM AS A DISEASE

The most recent, fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, published in May 2013 by the American Psychiatric Association, places “alcohol addiction”, along with “alcohol use” in a diagnostic category of “disorders caused by alcohol abuse”, which are characterised by a different magnitude of their aggravation¹. Alcohol addiction is defined as a group of behav-

¹ In DSM-IV alcohol addiction is described in the context of dependency on other psychoactive substances and defined as a harmful model of alcohol use, causing pathological changes; occurrent within the last twelve months with at least 3 out of 7 symptoms such as: higher alcohol tolerance, symptoms of withdrawal syndrome, exceeded dose and time of alcohol use, inability to control

ioral and somatic symptoms in people who consume alcohol in large quantities, such as alcohol withdrawal syndrome, alcohol tolerance and alcohol hunger. Two out of eleven diagnostic criteria indicate a problem with alcohol. More precisely, 2 to 3 criteria will signify mild severity of alcohol use disorders (AUD), 4 to 5 – moderate severity, 6 and more – serious problems. AUD criteria include: frequent alcohol consumption in large quantities over a long period of time; chronic thirst for alcohol and failed attempts at quitting; sacrificing time in order to obtain alcohol, drink it and remove the effects of drinking; alcohol hunger; alcohol consumption which leads to negligence of one's private, professional, social and interpersonal duties; cutting down on social, professional or recreational activities in favour of alcohol; alcohol consumption in emergency situations or despite physical and mental problems caused by alcohol; increased alcohol tolerance; occurrence of withdrawal syndrome symptoms (American Psychiatric Association 2013; see Samochowiec et al. 2015).

In the eleventh version of the International Classification of Diseases (ICD-11), which will have been completed by 2018², the “disorders caused by alcohol abuse” include i.a.: acute alcohol intoxication, harmful use, alcohol dependence syndrome, alcohol withdrawal syndrome, mental and behavioural disorders caused by alcohol use. Alcohol dependency is described as “a chronic disability to regulate alcohol use, resulting from continuous or repetitive intake of a substance” (Samochowiec et al. 2015, 58). Just like in ICD-10, it is identified by the following criteria: strong compulsion to drink alcohol; difficulties to refrain from drinking; presence of physiological symptoms of withdrawal syndrome and tolerance to constantly increasing doses of alcohol; negligence of other aspects of life, drinking alcohol despite its harmful effects of physical, mental and social nature (ICD-10; see Samochowiec et al. 2015).

Alcoholism as a disease is characterised by its own etiology and the presence of a physiological factor responsible for pathological changes in organism. Alcohol affects the brain, whereas the brain reacts to any change in blood's chemical composition (pathophysiological aspect). The brain as anatomical regulator of mental life (psychological aspect) enables contact with other people and is subject to social influence (sociological aspect). Chemical properties of alcohol influence the brain and weaken the functioning of chemical compounds produced by the nervous system, which are responsible for internal communication within the system of neurons (disruption of neurotransmitters' functioning). At the same time, it damages the brain's structure (30% of neurons in alcoholics' frontal lobe

drinking and a strong need to drink alcohol, sacrificing time in order to obtain alcohol or to recover from its effects, suspending any social, professional, recreational activities, continuation of drinking despite recurrent or persistent somatic, psychological and social problems (American Psychiatric Association 1994; see Woronowicz 1998; 2001).

² https://ec.europa.eu/health/indicators/international_classification_pl [access: 13.04.2017].

are damaged; they are responsible for higher brain functions. The damage also stretches to other structures, which are responsible for more instinctive behaviour patterns). The researchers claim that the brain of an alcohol addict changes on a functional level, even if its structure is left intact. Thus, alcoholism is a disease (a disorder of functions), which is present not only in state of intoxication, but also during abstinence (Woronowicz 1998; 2001).

NEUROBIOLOGICAL CONSEQUENCES OF ALCOHOL DISEASE

Alcohol addiction as a chronic disease leads to damage of the nervous system, digestive system, circulatory system, endocrine system, immune system, urinary tract; it is also conducive to skin lesions, cancers, foetal damage, sexual functions problems, psychiatric complications (Woronowicz 1998; 2001; Ryszowski et al. 2015). Long-standing toxic influence of methanol and its metabolites on the central nervous system (CNS) weakens blood flow and affects glucose metabolism in frontal lobes³, limbic system⁴ and cerebellum⁵, leading to permanent decrease in number and size of neurons and neural connections (Parsons 1998; Pfefferbaum et al. 2001; Sullivan et al. 2000; Nowakowska et al. 2007)⁶. Struc-

³ Symptoms of frontal lobe damage (typical for the frontal lobe syndrome) include: behavioral disorders, lack of initiative in action, interests disorders, yielding to external impulses, perseverations of motion, impaired memory, attention deficit disorder, inability to perform complicated mental operations, impaired visual perception, inability to understand metaphorical texts, excessive tendency for digression and confabulation, difficulties with constructing phrases and complex syntactic sentences, difficulties with naming people and objects and presence of stereotypical phrases in speech (Kaczmarek 1993).

⁴ The limbic system is physiological notion, established by the results of clinical research in order to define several cortical and subcortical brain structures, which are responsible for the regulation of human's emotional behaviour and some emotional states, also playing a role in memorisation and motivation building. The limbic system is also responsible for emotional content in verbal statements and steers the prosodic aspects of statements. Damage in the limbic system limits verbal and non-verbal forms of expression; additionally, they can even disrupt speech fluency (Lemandella 1977; Pruszewicz 1992; Panasiuk 2012).

⁵ Until recently, cerebellum has been considered the regulator of motoric functions, such as: eye-hand coordination and motor coordination, balance, muscle tension, precision and fluidity of movements and learning motoric behaviour. The recent research has proven that cerebellum, due to its connection with numerous structures of the nervous system (e.g. cortex, brainstem, subcortical structures), is also responsible for the regulation of human cognitive skills. Over three decades of the research of patients with cerebellum damage have resulted in observation of cognitive-affective symptoms, along with motoric dysfunctions, which were named by the researchers "cerebellar cognitive affective syndrome" (Starowicz-Filip et al. 2013; see Timmann, Daum 2007; Tirapu-Ustarroz et al. 2011; Tedesco et al. 2011; D'Angelo, Casali 2012; Schmähmann, Sherman 1998).

⁶ In psychological and medical literature there is a term "brain atrophy", denoting organic brain damage caused by alcohol, mostly afflicting cortical and subcortical brain tissue in frontal lobes,

tural and functional brain disorders, which usually affect prefrontal cortex and hippocampus⁷, contribute to deficiencies in the area of different frontal functions, such as: executive function disorders, i.e. supraspecific cognitive processes connected with broadly defined control over human behaviour and thinking, difficulties with solving complicated problems, decision-making and flexible change in action strategies, weakened behaviour control and ability to adapt on a psychosocial level. Furthermore, frontal dysfunctions embrace: problems with cognitive information processing, such as planning, supervising the execution of one's own actions and their correction, suppressing automatic reactions, weakening cognitive flexibility, attention switching between tasks, quick adaptation to changing circumstances. Alcohol addicts also suffer from operative memory distortion. Operative memory can be understood as short-term memory, which is responsible for simultaneous storage of several pieces of information over a short period of time and establishing connections between those pieces. Furthermore, alcohol dependency is linked with problems with emotional information processing (Nowakowska et al. 2007; Bechara et al. 2001; Noël et al. 2002; Cunha, Novaes 2004; Rosenbloom 2005; Lezak 1995; Blume et al. 2005; Dao-Castellana et al. 1998).

According to American researchers (Crews et al. 2005), neurobiological changes in CNS caused by chronic intoxication can only be marginally reduced (which can partly enhance cognitive functioning), however, it is not possible to return to the state a person was in before their alcohol disease. Other researchers (Joyce, Robbins 1993; O'Neill et al. 2001) point out that only some abstainers, due to their individual predispositions, can register improvement of their frontal lobe functions. Factors such as good cognitive functioning before the disease or

temporal lobes and cerebellum. It is mostly present in patients with Korsakoff's syndrome – chronic alcohol psychosis, which manifests itself with memory deterioration, confabulations, desorientation, false people recognition after years of heavy drinking. Partial reduction of pathological changes has been observed when they curbed drinking (Woronowicz 1998; 2001). Brain atrophy (its smaller size and weight) in alcohol addicts is also confirmed not only by post-mortem examination, but also by medical imaging technologies, such as computer tomography or magnetic resonance imaging. Positron emission tomography and single-photon emission computed tomography show a local decrease of blood flow and metabolic rate in alcohol addicts compared to people who have control over their alcohol consumption, even if no measurable shrinking of brain tissue has been stated. Structural and functional brain damage resulting from long-time intoxication, which has been confirmed in magnetic resonance spectroscopy and positron emission tomography, may occur due to a decrease of neurons' number, their size and density of neuronal connections. Neuroimaging techniques in alcoholism have been discussed in the article *Techniki obrazowania a alkoholizm. Podglądanie pracy mózgu* (2000).

⁷ Hippocampus is a small structure in the limbic system (each temporal lobe contains one hippocampus), responsible for memory, primarily for information transfer between short-term and long-term memory and spatial orientation. Hippocampal damage impairs person's ability to learn (Bochenek, Reicher 1981; Villee 1977).

a smaller quantity of consumed alcohol may also play an important role here. French researchers (Pierucci-Lagha, Derouesne 2003) put forward a theory that cognitive functions of long-term abstainers do not relax, but rather take a form of stupor. The lack of unambiguous research results refers to the thesis about correlation between period of abstinence and improvement of cognitive functions (Drake et al. 1995; Bergman et al. 1998; Sullivan et al. 2000).

The research in Poland⁸ was conducted with the aid of neuropsychological tests: Wisconsin Card Sorting Test for assessment of operative memory and executive functions and N-back Test for assessment of short-term visual, operative memory and coordination. The tests' results showed that the aberrations in cognitive functioning of alcohol addicts do not improve over the duration of abstinence; on the contrary, they are permanent and present in different phases of alcohol disease. Long-term alcoholics and elderly people commit more perseveration errors, which indicate inflexibility of thought and reaction, repetitiveness of reaction and reduced behaviour flexibility. The results of the Wisconsin Card Sorting Test, i.e. badly matched categories, indicate poor thought effectiveness. Higher education, however, may be a factor protecting an addict from excessive damage of frontal lobe functions (Nowakowska et al. 2007).

FACTORS INFLUENCING THE SCALE AND EXTENT OF BRAIN DAMAGE IN ALCOHOL DISEASE

Among factors influencing the scale and extent of brain damage caused by the toxic influence of alcohol present are: amount of consumed alcohol, frequency of alcohol consumption, age of alcohol initiation and period of drinking, age, education, sex, genetics (genetic predisposition to inherit higher alcohol tolerance), family history of alcohol addiction, risk originating from prenatal exposure to alcohol, general somatic condition (Parsons 1996; see Kopera et al. 2011).

So far, it has not been unambiguously stated, whether depressive behaviour or anxiety impacted cognitive functioning of alcohol addicts in a negative way. However, researchers claim that even liver damage (Schaeffer et al. 1991) or tobacco smoking (Glass et al. 2006; 2009) may have a negative effect on an alcoholic. Upon analysis of the research results of negative impact of alcohol on human brain, it cannot be explicitly stated to what extent alcoholism present in the family affects cognitive functioning of an addict (Kopera et al. 2011). However, researchers' studies prove that woman's brain is more susceptible to destructive

⁸ The research was conducted on 88 patients (67 males, 21 females) with alcohol addiction, aged 21–58, of whom 51 persons (38 males, 13 females) were examined right after the period of inebriation and 37 persons (29 males, 8 females) who had been abstaining for at least a year (Nowakowska et al. 2007).

influence of alcohol⁹ and acceleration of brain's physiological aging¹⁰, characterised by weaker concentration, selective attention, impaired visual memory and visual-spatial skills, slower processing of information, reduced mental flexibility and ability to plan in necessary situations or solve a new or a complicated problem, inability to acquire new skills or information, dysfunctional short-term memory (Lezak 1995; Kopera et al. 2011; see: *Szkodliwy wpływ alkoholu na mózg*, 2004).

On the other hand, it is difficult to determine how alcoholic's cognitive and executive disorders are influenced by their age, duration of addiction and quantity of consumed alcohol, as the evaluation of the aforementioned factors is based on addict's retrospective assessment. The period suggested for emergence of serious neuropsychological changes is defined as ten years of alcohol abuse (Eckardt et al. 1998); others define it as four to nine years (Beatty et al. 2000).

The period of abstinence should also be included as the most influential variable factor for alcoholic's cognitive functioning. There is a visible improvement of perceptual-motor skills, visual-spatial skills, memory, attention and abstraction ability during the first weeks of abstinence, as the symptoms of withdrawal syndrome wear off (after a short period of abstinence the symptoms should wear off in about two weeks; after a moderate period – in two months; after a long period – in more than two months) (Claiborn, Greene 1981; Kish et al. 1980; Fein et al. 1990). However, a correct assessment of cognitive functions within the first two weeks is not possible due to withdrawal syndrome symptoms (trembling, irritation, agitation, sleep disorders). Cognitive disorders are still present in the second period of abstinence. In the third period it is possible to observe patient's improved reaction, attention, ability to learn and to memorise verbal content, yet visual-spatial dysfunctions, problems with short-term memory, difficulties with thinking and problem-solving on the basis of non-verbal material are still present.

⁹ Accelerated progress of negative impact of alcoholism on females manifests itself through impaired short-term memory, psychomotor and visual-spatial functions, planning dysfunctions and motoric control. Despite reduced quantity of consumed alcohol and shorter period of addiction, it was observed in female patients that their left hippocampus is smaller and generalised atrophy of brain cells is similar to the one detected in male brains (Acker 1986; Piazza et al. 1989; Glenn 1993; Agartz et al. 1999; Sullivan et al. 2002; Mann et al. 2005; Flannery et al. 2007; Kopera et al. 2011).

¹⁰ Despite extensive research, researchers still have not been able to determine precise criteria for the variable character and severity of cognitive changes in physiological brain aging and in aging of the CNS, accelerated by pathological processes. Psychiatrists and geriatricians coined a term "mild cognitive impairment" (MCI), which denotes a clinical condition characterised by impaired cognitive functions (yet not as severe as in dementia), mostly memory, usually coupled with independence in everyday life. Studies show that people affected by MCI are more prone to dementia in later life. The term "MCI" has been used to determine a transient condition between normal cognitive functioning and a clinical stage of possible Alzheimer's disease (AD). Nowadays, MCI is considered an autonomous, heterogeneous clinical unit, which is different from the preclinical stage of AD, and in which a decrease of cognitive abilities is clearly visible compared to the stage before cognitive disorders (Gabryelewicz 2011).

Some alcoholics experience memory improvement after six weeks of abstinence (Beates et al. 2005), others do not show positive development even after one year since they quit drinking. Twelve-month abstinence may only partially improve cognitive functioning (Nowakowska et al. 2007; Kopera et al. 2011).

Impaired cognitive functioning, which is diagnosed in alcohol disease, poses a question to a speech therapist (a therapist and researcher of verbal behaviour in regard to verbal and communication competence and performance effectiveness): to what extent do cognitive deficiencies, manifested by impaired memory and executive functions, influence verbal behaviour of patients with alcohol addiction?

LANGUAGE AND COGNITION

Ruminations about a relation between language, cognition and reality revolve around two opinions: a concept originating in structuralism, postulating social conditionality of human's verbal development (de Saussure 1961) and theories of generative grammar¹¹, nativist ideas or neurobiological concepts¹², which postulate congenital character of verbal behaviours which can be attributed only to humans¹³.

A reference to biology in search of the crux of language contradicts the existence of formal structures, classical categories and meaningless rules. According to cognitive grammarians, cognitive symbols mirror the conceptual apparatus in human brain, however, they do not directly mirror the world. While describing the world, a person uses metaphors and metonymies, which consist the basis of human cognition (see Lakoff, Johnson 1988; Woźniak 2005).

G.M. Edelman (1998) states that human cognition is possible as a result of the best developed brain among all living creatures in both structural and functional aspect. Human brain determines creation of two types of consciousness: primary consciousness (lower-order consciousness) – which is knowledge about the existence of other objects in a particular moment, with no consciousness of “self” and no sense of the future or the present; and secondary consciousness (higher-order

¹¹ According to N. Chomsky (1982), humans use an ethnic language, constructing grammatically correct and meaningful sentences; they are also able to distinguish them from the incorrect ones due to a “mechanism” inherent to human beings, called “processor”, “language module” or “linguistic competence”.

¹² Neurobiologist G.M. Edelman (1998) claims that humans speak a language, because their brain structure is the most organised and the most complicated one and it consists of about ten billion neurons and about a million synapses which connect neurons and thus create function systems.

¹³ Language and speech in the context of various philosophical, linguistic, sociolinguistic and neurobiologic theories are the subject of the following works of S. Grabias, *Mowa i jej zaburzenia*, Lublin 1997; idem, *Język w zachowaniach społecznych*, Lublin 2001 and idem, *Teoria zaburzeń mowy. Perspektywy badań, typologie zaburzeń, procedury postępowania logopedycznego*, [in:] S. Grabias, M. Kurkowski (eds.), *Logopedia. Teoria zaburzeń mowy*, Lublin 2012, pp. 15–72.

consciousness), which is attributed only to human beings, as its origin is determined by language¹⁴.

According to the theory of linguistic determinism, which is supported by philosophers and linguists (J.G. Herder, W. Humboldt, L. Wittgenstein, F. Cassirer, J. Trier, K. Ajdukiewicz, A. Korzybski, E. Sapir, B. Whorf), thinking is inseparably linked with language, and everything a person thinks of is verbalised. Two types of behaviour should be considered “language behaviour”: cerebration (the so-called internal speech) and communication present in external speech (Grabias 2001; 2003; 2012).

In contemporary speech-language pathology it is assumed that speech is “a group of functions performed verbally by a person while learning about the world and sharing its interpretation with other participants of social life”, which means that it has three fundamental functions: cognitive, communicative and socialising (Grabias 2001; 2003; 2012).

LINGUISTIC BEHAVIOURS VS CONCRETE AND ABSTRACT BEHAVIOUR

The single-factor theory of brain functioning (antilocalisation theory) stipulates that human brain is an anatomical and physiological unity. Thus, lowering its general functional potential leads to problems with execution of complex activities (Kaczmarek 1995). According to J.H. Jackson, all higher-level mental activities consist of different organisational tiers, whereas it is the highest tier which is altered in pathological situations (Maruszewski 1970). From the standpoint of the advocates of the single-factor theory of brain functioning (P. Marie, H. Head, J.H. Jackson, K. Goldstein and D. von Lancker), it is important to state that as a result of brain damage, a particular function will be impaired, irrespective of damage location. Language impairments resulting from the damage are interpreted as cognitive disorders (Maruszewski 1970; see Panasiuk 2012).

Goldstein’s (1948) antilocalisation theory (Panasiuk 2012) served as a springboard for a thesis supported by extensive clinical research that human organism is a complicated system of a specified configurations of factors; furthermore, Goldstein formulated behaviour patterns characteristic for people who are able to adopt abstract or concrete behaviour.

For patterns characteristic of a person adopting abstract behaviour (i.e. able to think in the abstract, act freely, plan and program their actions in new situations), Goldstein chose the following:

- adopting any mental attitude,

¹⁴ A detailed description of Edelman’s theory of neural group selection (TNGS), which presumes the origin of two types of consciousness, is provided by T. Woźniak (2005).

- initiating a particular activity or executing it on external command,
- any transition from one sphere of action to another,
- simultaneous maintenance of several different aspects of a situation,
- reacting to several stimuli which are not connected with one another,
- recognition of a certain entity; extraction of its particular elements and its subsequent reconsolidation,
- extraction of the “I” from the external world.

To contrast abstract behaviour, Goldstein suggested behaviour patterns characteristic for concrete behaviour, yet dependent on the circumstances of a particular situation (usually everyday, habitual activity), individual and sensual experience of a human being. As a result of any brain damage, concrete behaviour starts to dominate over the abstract and is manifested through the following behaviour patterns:

- linking verbal reactions to currently experienced stimuli,
- close relationship between verbal behaviours and previously created verbal reactions to a particular situation,
- too much focus on details connected with a situation while formulating a verbal message,
- tendency to describe objects because of their utility values,
- inability to group objects according to their particular trait (form, material, colour).

The theory of Goldstein may become a starting point for assessment of verbal behaviour of alcoholics, who sustained structural and functional brain damage resulting from the toxic effect of alcohol, consequently experiencing cognitive function disorders.

CONCRETE AND HIERARCHICAL CODE AND ITS MANIFESTATIONS IN LANGUAGE

In psychology, cognitive orientation is a primary quality of living systems, as it applies changes in environment as information necessary to live. It is also active search for information about concrete properties of external world in order to foresee certain events. Human brain is responsible for information processing, as it codes it according to specified rules. Knowledge about the world, “acquired” by the brain, is expressed in words, which create a language. Organising information in the brain is performed through impressions and observations created by the brain, as well as through individual experience or collective experience encapsulated in linguistic structures (Obuchowski 1970; see Panasiuk 2012).

Organising information is possible owing to three orientation levels in external reality: concrete code, hierarchical code and creation code. A concrete system,

which is common for humans and animals, is analysis-oriented and differentiates fragments of reality. Within it, two codes are detected: a monoconcrete code, i.e. a code which is natural, primitive and most strongly linked to sensory experience, responsible for the ability to differentiate stimuli of one sensory modality; and a polyconcrete code, which analyses multimodal experiences. Verbal reactions emerging on this level of understanding external stimuli are contextually linked with a particular situation experienced by an individual. Verbal behaviour patterns, which are present in a monoconcrete system, are conditioned reflexes. They function as automatic, formulaic structures and are verbal reactions, acquired in a probabilistic (statistical) manner and arising from personal experience. Verbal behaviour patterns, which emerge in a polyconcrete code, refer to pragmatic and interactive aspects of verbal functioning. The hierarchical system, typical of humans only, enables them to see qualities of phenomena at various organisational levels and process them thanks to abstract thinking, generalisation, analysis and synthesis. It is, therefore, possible to create semantic relations between pieces of information obtained in the concrete system. Verbal behaviour patterns in this system are not a result of a contextual reaction to an external stimulus, instead, they become symbols of a group of phenomena and entail a creation of mental patterns which represent the reality. The highest system of human's cognitive organisation is the creation code, which renders it possible for a creative human being to process the reality verbally – in case of poetry, or non-verbally – through other forms of artistic activity (Obuchowski 1970; see Panasiuk 2012). It turns out that the polyconcrete code (picture code) is fundamental for the use of the creative code (translingual code). As believed by the researchers, it may serve as the evidence that outstanding individuals may have low linguistic capabilities (characteristic for the hierarchical code) (Jacobson 1989; Kaczmarek 1995; Panasiuk 2012).

LINGUISTIC DISORDERS IN ALCOHOL DISEASE – METHODOLOGICAL PROPOSITIONS

As a consequence of deficiencies in memory and executive functions, some alcoholics may experience deterioration of hierarchical attitude and domination of concrete attitude, reflected by inability to execute mental-verbal operations unrelated with a particular, situation-related and verbal context, stereotype or individual experience. Among features of a concrete language one may also find: problems with creative organisation, difficulties with planning and constructing sentences, impaired capability of solving new problems, predilection for phrases conditioned by context and a concrete stimulus (typical of the monoconcrete code), automatic behaviour and tendency for repetition, routine and triteness of speech.

It may seem that statements formulated by alcoholics or people in early stage of abstinence are fluid, even on the verge of “poetic”, as they are abundant in metaphors, phraseologisms or words from different linguistic registers. However, those phenomena cannot be attributed to creativity or artistic attitude. The relative “fluidity”, “vividness” and strong digressive aspect of speech, in which the abundance of words cloaks the actual lack of content, may be a consequence of the compensation mechanism, which is triggered in response to progressive neurodegeneration¹⁵. Another issue is the use of common metaphors, proverbs, phraseologisms or aphorisms, which are present in common language and adopt a form of linguistic stereotypes with standard meaning; also, they do not require metalinguistic operations in interpretation (Bartmiński, Panasiuk 2011). Additionally, a verbal reference to own experience by people affected by long and severe alcohol disease, very typical of the concrete behaviour, often revolves around subjects connected with drinking, alcohol, alcohol disease or alcoholics. This specific monothematicity, digressiveness, tendency for confabulation and problems with words’ revision and nomination may distort effectual communication.

A reference to expected signs of alcoholics’ verbal behaviour may give rise to a research hypothesis, which should facilitate their detailed description and determine the most suitable research methodology. It is, therefore, necessary to state that toxic effect of alcohol on brain structures does not only cause organic damage of frontal and prefrontal structures, cerebellum and hippocampus, but is also reflected in cognitive dysfunctions and influences the way of person’s understanding of the world and its reflection in verbal behaviour.

The diagnosis of alcoholics’ speech impairments may be established through assessment of narrative skills, which reflect knowledge about the world ingrained in human brain, i.e. a means of cognitive representation of the world. Described events create a story, which always involves a protagonist, presents certain values, intentions, plans for realisation; there is always a complication, which entails chances of overcoming hardship and realisation of intentions. Narration is universal for social behaviours; in culture it is fundamental for myths, religion, tales, legends, ideologies, or even movies or TV series. It is the most natural way of sharing human experience. Narrative thinking is related to the existence of memory and individual’s operational knowledge. Furthermore, narrative schemes in mind also influence the perception of reality (Trzebiński 2002).

Other psychological theories present narration as an information strategy (C. Lewis, N.H. Freeman, C. Hagestadt, H. Douglas, after: Woźniak 2005), a procedure for explaining natural events (B. Bokus, G.W. Shugar, M. Donaldson, after: Woźniak 2005), a symbolic act for creating meaning (B. Bokus, A. Nicolo-

¹⁵ Compensation strategies in aphasiac disorders are described by J. Panasiuk in her publication *Afazja a interakcja. TEKST – metaTEKST – konTEKST* (2012).

poulou, after: Woźniak 2005), a model of individual experience (T. van Dijk, after: Woźniak 2005).

Speech therapists maintain that the abilities of narration and descriptions are the most difficult form of human linguistic activity. Both forms of narration are structures of very extensive compositions. In a narrative form events take place in a time sequence structured around a frame: “now – previously – afterwards” or “here – there”. Time in description remains unchanged, whereas the ability to manoeuvre the space (here and there) becomes increasingly important, which is much harder and is constituted in human brain at the age of ten (whereas narration is constituted at the age of six) (Grabias 2012).

Narrative structures contain all human knowledge about the world, and thanks to narrative or descriptive texts, a researcher is able to specify the means of processing of a linguistic sign (orientation codes), linguistic imagining of reality (lexical-semantic level¹⁶) and disorder of inner speech (resulting from planning disorder), which in Vygotsky’s opinion (1989), “handles human thinking” (p. 351) and is a momentary, dynamic transition from thinking to external speech¹⁷. Narrative texts may also expose problems with the steering/governing function of speech, which demonstrates to what extent individual’s actions are governed by speech¹⁸. They can be reflected in the propensity for stereotypical thinking and acting¹⁹.

¹⁶ Disintegration of language capabilities is a mirror image of the language acquisition process. In ontogenesis, people at first acquire phonetic, phonological and prosodic elements of language, later on – its grammar. Lexical-semantic level is for a human being the most complicated part of language structure; it is also the last one to acquire. In neurodegeneration, structures developed at the end are the most susceptible to disintegration; therefore, lexical-semantic abilities are affected by alcoholism first (Jacobson 1968, 1989; Panasiuk 2012).

¹⁷ According to L.S. Vygotsky (1989), ontogenesis encompasses particular forms of speech: external, egocentric and internal. Language mechanisms in external and internal action control are described by M. Kielar-Turska (2013).

¹⁸ A. Luria’s theory (1967) stipulates that in early childhood words control human’s behaviour in a comfortable situation, as they are influenced by prior verbal instructions or child’s spontaneous activity. In an uncomfortable situation, the control function of speech does not trigger child’s inhibitive reaction. Understanding of verbal instructions is developed until the age of 5; until this moment child’s speech fully controls its behaviour.

¹⁹ 20th-century researches conducted by Russian psychologists proved that speech control function disorders occur with high frequency in patients with frontal lobe damage. Clinical experiments proved that motor analyser remains numb in reaction to a verbal stimulus, which means that the influence of verbal command on synapses is insufficient. As a result, a patient is unable to eliminate stereotypical motor reactions. If a patient tries to execute a verbal command, their own verbal activity may hamper their performance, which, in consequence, results in a loss of words’ control function (as there is no relation between a verbal command and motoric stimulation). The researchers emphasise the difficulty in reconstruction of verbal competences of people with severely damaged frontal structures owing to the aforementioned behavioural disorders (Luria 1967).

The examination of narrative skills will be conducted on three groups of men suffering from alcohol disease – binge drinking, but not inebriated during the examination, undergoing therapy and abstaining from drinking for two to eight weeks and those declaring at least one year of abstinence²⁰. Tests for understanding and construction of narrative categories will embrace giving an account based on the following: a photostory, a previously watched film, a fragment of literary and functional texts, autobiography, description of a photography, landscape, still-life and abstract painting, and a cognitive description of a person.

CONCLUSIONS

The following article sheds light on the problems posed by alcohol disease in speech therapy. The study of cognitive deterioration typical for alcoholics and presented herein encouraged the author to create a research tool, which will present the spectrum of verbal disorders in alcoholism, observed in the most refined form of verbal expression – the ability to narrate. The research of alcoholics' narrative abilities is conducted in the Department of Logopedics and Applied Linguistics at Maria Curie-Skłodowska University in Lublin, under the supervision of prof. dr hab. S. Grabias and prof. J. Panasiuk. The author of the article hopes that the results of her research work will contribute to systemising knowledge about language deficiencies caused by alcohol and will show a direction in therapy which will help to inhibit neurodegenerative processes and rebuild (even in part) lost linguistic competencies, along with support and acceleration of abstainers' convalescence.

Determining the state of narrative skills along with the spectrum of linguistic disorders in alcohol addiction creates a perspective for their comparison with linguistic disorders resulting from other CNS-related pathologies such as: psychoorganic frontal lobe disorder, mild cognition impairments (MCI), dementia or or neurodegenerative diseases, such as Alzheimer's disease, Parkinson's disease, multiple sclerosis (SM) or amyotrophic lateral sclerosis (ALS).

Translated by Ewa Pospieszil

²⁰ Since it is impossible to assess patients' verbal behaviour and narrative skills before their alcohol disease, their narrative texts will be compared with the texts provided by people from a control group – men in good somatic, neurological and psychical condition, who control their consumption of alcohol and match patients in terms of age and education.

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