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Communicative Skills in Logopedic Management. From Asperger do Williams

*A powerful agent is the right word.
Whenever we come upon one of those intensely right words
in a book or a newspaper the resulting effect is physical as well as spiritual,
and electrically prompt.*

Mark Twain, *Essay on William Dean Howells* (1906)

SUMMARY

Communication capability is a basis of social, emotional, cognitive and linguistic development of child. That includes use of language among social group, which is adequate and referend to social status of interlocutors (social capability). Moreover, the communication capability is to about adjust conversation to present time, place or subject (situational capability). Also, the pragmatic capability is the achievement of particular purpose of conversation. Important part of speech therapy diagnosis are verbal and nonverbal factors of communication capabilities, which are the basis to differentiate developmental disorders, and to direct therapeutic interference. Based on two case studies of neuro-developmental disorders (Asperger's syndrome and Williams syndrome) specified profiles of communication capabilities has been presented, concerning the emotional, cognitive and linguistic development of child.

Key words: communication competence, social linguistic rules, situational linguistic rules, pragmatic linguistic rules, Asperger's syndrome, Williams syndrome

INTRODUCTION

The contemporary perspective of the description, diagnosis and treatment of speech disorders is determined by the interaction theory introduced into Polish logopedics by Stanisław Grabias, who defines interaction as “the system of two adjacent processes of giving meaning to human behaviors and the process of adjusting one’s behavior to the behavior of members of a social group” (Grabias, 2007, 358). In his interpretation interactive behaviors may be manifested without the sender’s will (these are signs of psychophysical traits and social conditions), they can be also sent intentionally (they are language symbols – verbal and non-verbal), serving to inform about the sender’s intentions and anticipations regarding the receiver. A condition for the reception of interactive behaviors is to reach the sender’s mental states (this takes place through the reception of the sender’s signals and their association with the mental states identified by retrospection with one’s own states), to determine the cohesion of behavior (through reading the sender’s mental states in the context of the physical situation presented in spatial and temporal terms, and the social situation presented in terms of social roles), and to discover the sender’s wishes signaled by definite behaviors. In a specific interactive situation, mutual ideas of its participants have to be agreed upon at least to some extent. In the complex and multifaceted process of negotiating the meanings of behaviors a significant role is played by linguistic signs. The study of interaction takes into account the role of language both in organizing meanings (cognition of reality) as well as in organizing the message and transmitting the knowledge of reality to other people (linguistic communication) (Grabias, 2019). When the two functions of language – cognitive and communicative – complement each other, effective interaction is possible.

Interaction theory has defined a new scope of research problems and practical objectives pursued in the study into speech disorders, which goes beyond the structural complexity of utterances and comprises such phenomena as the cognitive interpretation of the world, emotional assessments of phenomena in the reality, the system of acquired beliefs and declared values, or finally, the contextual determinants of specific communicative behaviors¹. In the description of inter-

¹ Recent vivid interest in the process of interpersonal communication has resulted – in science – in interpretations of this phenomenon from the standpoint of psychology, sociology, anthropology, ethnography, pedagogy, political science, press science, philosophy, or finally logopedics. In these sciences, interesting monographs on social communication have been produced whose scope significantly goes beyond the traditional approach to communication in linguistic terms and which build the methodology of a new discipline called *communicology*. The interdisciplinarity of this branch of science stems from different research perspectives: sociopsychological – communication as interpersonal influence, cybernetic – communication as the information flow, rhetorical – communication as

action, significant importance is attached to relationships between interlocutors, determined by their social position, personality traits, temperament, or emotional state. Taking these determinants into account depends on the communicative skills of interlocutors that determine a more or less effective implementation of intentions. Diagnosis of the state of communicative skills and therapy oriented towards improving effective communication has become some of the most important goals of logopedic management in neurodevelopmental disorders.

THE CONCEPT OF COMMUNICATIVE COMPETENCE AND SKILL

Communication between people is determined by the conscious or unconscious rules of language use in different situations produced by a community and the sender's experience, which Dell Hymes – the author "Sociolinguistics and the Ethnography of Speaking" – terms communicative competence. Hymes argued that linguistic competence, or the knowledge of linguistic signs and rules of connecting them, is not enough to describe speech acts, which are structures connected with cultural and personal elements, while an individual's linguistic behavior is not merely a sequence of grammatically correct sentences, their shape being determined by social and situational determinants. Utterances and situations are connected by correspondence (equivalence) rules, this correspondence being determined by "communicative competence", i.e. the knowledge of the rules of language use in different situations produced by a societal community, which develops with an individual's socialization and life experiences (Hymes, 1980).

At present, "communicative competence" is one of the fundamental concepts that are applied in logopedics. Stanisław Grabias determined its conceptual paradigm and described the model of verbal behaviors that depend on who is speaking, to whom, in what situation, and to what purpose (Grabias, 2019). According to this formula, the sender uses one linguistic code or many codes determined either socially or territorially, and when creating a text s/he performs different social roles. The roles stem from the receiver's social position. At the same time the speaker adapts to the situation, in which a linguistic act takes place and selects the linguistic shape of utterance according to the intention pursued.

the art of public speaking, semiotic – communication as the process of sharing meaning through signs, sociocultural – communication as creating and playing the social reality, critical – communication as a reflective challenge mounted to the unjust "discourse of power", and phenomenological – communication as the experience of oneself and others through dialog (Dobek-Ostrowska, 1999).

Table 1. The system of linguistic and communicative competences and skills

Competences – social knowledge in individuals' minds	Individual implementation of competence
Linguistic competence – inventory of phonemes, lexemes and rules of building grammatically correct and sensible sentences: – phonological, – morphological, – syntactic.	1. Sentence building – substantive skills, enabling sentence-building in the form of sound, optical and tactile signals; – grammatical, morphological and syntactic skills.
Communicative competence – knowledge of the status of linguistic codes and the rules of constructing utterances appropriate for a situation: – stylistic, – social, – situational, – pragmatic.	2. Constructing dialogical and narrative utterances – communicative skills: – stylistic, – social, – situational, – pragmatic.

Source: Author's presentation based on Grabias, 2019.

Each linguistic interaction therefore requires that speakers have knowledge of the language system (linguistic competence), its effect not being connected only with the ability to construct a linguistically correct utterance (system skill). Formulation of an effective utterance requires the speaker's knowledge of the situational, social and pragmatic rules of verbal behaviors (communicative competence), as well as the ability to implement these rules in human relations (communicative skills) (Grabias, 2019).

S. Grabias distinguishes three types of determinants within the communicative competence:

I. Situational determinants of utterances, and among them – the following sets of components of varying degrees of complexity:

- 1) most connected with the situation (speakers, the place and time of conversation);
- 2) relatively connected as they admit of diverse possibilities of choice (the channel of information transmission and genre of utterance);
- 3) free (the subject of conversation).

The number of speakers determines the following forms of messages:

- a) monological (one speaker),
- b) dialogic (at least two speakers),
- c) polylogic (many speakers participating at the same time).

In case the attention of interaction participants is focused on one phenomenon, the polylogue assumes the form of successive dialogs, in unfocused situations – the polylogue becomes a sum of dialogs.

The time of conversation defines three types of interaction between the sender and the receiver:

- a) interaction takes place at the same time for its participants,
- b) the sender addresses receivers in the future,
- c) the sender speaks to receivers from the past

Furthermore, the relation between the time of conversation and the time of events taking place in the conversation defines two more interaction types:

- a) the time of conversation can be consistent with the time of action,
- b) the time of conversation can differ from the time of action; it can concern events that are to occur in the future.

The place of conversation refers to the relationship between the shape of utterance and the place where it was produced. The types of places differentiate the form of verbal behaviors. The most important is the distinction between an outdoor site and a closed place. The open-air location creates a situation in which distances between speakers can be substantial, which reduces eye contact, makes one use one's voice in a specific way, and requires the use of special linguistic and non-linguistic factors.

The utterance genre results from the relationship between three always present components of linguistic interaction, i.e. speakers, the place and time of interaction, and the subject of conversation:

- a) the utterance content is connected with neither the time nor place of action,
- b) the utterance content is connected only with the sender's situation,
- c) the utterance content is connected only with the situation of the receiver,
- d) the content of the message is connected with the situation of the sender and the receiver (the situation corresponds with the content transmitted or the utterance is a faithful description of the situation).

The subject of conversation is determined by education, profession/occupation, age and sex. In contemporary Polish the most typical of everyday communication are the following theme groups: autobiography, family home, school, work, leisure time, holidays, entertainment, cultural life, services, ideology, and other fields.

II. Social determinants of utterances, composed of social linguistic roles, are realized by speakers in different communicative situations. These roles form a hierarchical system, each of them having a certain set of linguistic factors. The typology of roles takes adult-adult, adult-child, and

child-child relationships into consideration. The essence of linguistic roles is decided by:

- 1) the statuses of interlocutors that determine their position as that of equality or that of subordination and superiority,
- 2) kinds of contact: official/formal or informal (friendly), individual or group contact, permanent or sporadic.

Social determinants of linguistic interaction are expressed *inter alia* in the use of specific genres such as: proposal, advice, mentioning, protest, and warning – for equal statuses; prohibition, order, request, and command – for unequal statuses. The most pronounced manifestation of the social determinants of utterances is the use of polite expressions because in each class of expressions determined by the identity of pragmatic functions there are expressions customarily assigned either to equal statuses or to the sender's subordinate or superior status.

III. Pragmatic determinants of utterances involving the fact that underlying each linguistic behavior is some intention or desire of the speaker, termed 'intention'. The realization of an intention is described in terms of four pragmatic functions: informative, modal, emotional, and that of action.

- 1) Informative function refers to the intention of conveying or obtaining information; it is implemented when the sender announces something about the state of affairs, denies or confirms the interlocutor's announcements, requests that an item of information be complemented or an alternative be decided;
- 2) The modal function of utterance refers to the speaker's attitude to the way the states of affairs persist and to the occurring processes; modality can be measured in terms of certainty, supposition, doubt, and exclusion.;
- 3) The emotional function of utterance is connected with expressing one's attitude to the surrounding reality – it defines the features of the sender's personality. The use of emotive devices is subject to social and situational determinants. In human communication, the sender's emotional states can be manifested, expressed or communicated. Each technique uses different expressive means and different rules of use of these means.

The function of action involves such linguistic behavior as when the sender, assessing the receiver's actual capabilities, wants the receiver to undertake action (request), desist from action (prohibition) or not undertake action (refusal of permission to act); the receiver may undertake action or refuse to act, while the sender may or may not have sanctions to force the receiver to act; sanctions can be of legal or moral nature, and are closely connected with the social roles performed by the interlocutors; the termination of action may be beneficial to the sender, receiver or both (Grabias, 2019).

The course of human interactions can be controlled at different levels of communicative competence. William S. Howell (1982) has defined its four stages:

1. "Unconscious incompetence" – the interaction participant does not understand messages of other persons and is not conscious thereof (does not recognize the deficit).
2. "Conscious incompetence" – the interaction participant knows/recognizes that s/he interprets the other in an erroneous way, but s/he ignores it and does not seek to change this.
3. "Conscious competence" – the interaction participant keeps trying to control his/her communicative behavior so that it is the most effective.
4. "Unconscious competence" – the interaction participant understands everything that takes place in the process of communication, without being conscious thereof.

It can be assumed that there is not one comprehensive therapy that would allow obtaining satisfactory results in treating patients with Asperger syndrome, hence its different forms are applied:

it is the complete knowledge about the rules of language use, both in producing and receiving messages, it is the skilful use of language in accordance with the planned intention, the performed social roles and the situation in which an interaction occurs.

In the study of communicative skills for logopedic diagnosis, the interpretation of verbal and nonverbal behaviors of a human individual, embedded in the world of individual sensations, emotions and subjective experiences determined by biological deficits, follows the rigors of quantitative assessment with difficulty, it requires directed observation and qualitative assessment of verbal behaviors in diverse social relationships. The results of such investigation are a highly important criterion for differentiating the clinical picture of neurodevelopmental disorders.

NEUROBIOLOGICAL DETERMINANTS OF COMMUNICATIVE COMPETENCES AND SKILLS

The dichotomous division of competence into linguistic and communicative is based on the functional specialization of the brain hemispheres. The right hemisphere regulates the production of emotional utterances and the left – rational ones. The functional asymmetry and specialization of the hemispheres is a result of evolution, whose direction was marked out by the changing living conditions. The way of processing information by either hemisphere determines the dominance of each in regulating a given linguistic function (Mroziak, 1992; Herzyk, Borkowska, 1999).

The specialization of the left hemisphere comprises greater abilities to analytically and sequentially process data, control speaking processes, read and write, remember dates and facts, think logically and to solve complex problems, and mathematical problems. The left hemisphere is associated with the human ability to execute analytical operations, differentiate and sequentially organize data. These operations involve systems of similar units that differ at the level of distinctive features. The analysis of features performed by the left hemisphere is of combinatorial nature, it is equipped with the mechanism of preparing information included in the grid of binary oppositions. The strategies for operation of the left hemisphere involve linguistic coding: the hemisphere dominates in the regulation of articulatory functions and in the production of complex grammatical forms.

The functional specialization of the right hemisphere is connected with the ability to perceive comprehensively and simultaneously (*Gestalt*), with visual-spatial imagination, recognition of the nonverbal subcodes of language (kinetic and prosodic) and with the reception of information in the form of notions, images and associations. Strategies for information processing by the right hemisphere consist in synthesizing data. It is attributed a role in preparing the cognitive values of the text, which consists in utilizing personal experiences, knowledge of the world, and the system of associations in interpreting current stimuli. It is connected with long-term verbal memory and uses pictorial semantics, hence the structure of its lexicon is connotative and associative. These properties of the right hemisphere make it possible to refer a specific utterance to the non-linguistic context, to recognize emotional meanings and respect discourse rules.

Although the brain hemispheres function differently – the left hemisphere processes known information sequentially and analytically, while the right operates holistically and is geared to the reception of stimuli – they cooperate and maintain the homeostasis of the central nervous system, which ensures optimum conditions for the correct course of the lateralized cognitive and emotional processes. It should be emphasized that the functional description of the left and right hemisphere is a certain simplification because it is only the coordinated cooperation of all cerebral structures that enables the correct course of verbal behaviors. This is indicated by the effects of damage to the subcortical structures, the limbic system and the brain stem. The complex speech mechanisms engage the functioning of the whole brain, each of its parts being responsible for different aspects of speaking (Panasiuk, 2012).

In the case of neurodevelopmental disorders there may occur difficulties in the performance of the units of the linguistic system with the developed communicative skills, communication difficulties with the correct use of language structures, or simultaneous limitations in the application of language structures and in message production according to the speaker's personality, subject, time and place, and the assumed intention.

The specificity of problems that emerge in describing the picture of individual syndromes of neurodevelopmental disorders assumes different forms. Individual spectra of dominant difficulties in the sphere of language and communication require appropriate therapeutic procedures. Distinctly different profiles of disorders in language and communicative skills occur in the case of Asperger syndrome² and in the case of Williams syndrome³. In children with Asperger syndrome, despite their intellectual norm and relatively high language skills, the ability to respect communication rules is significantly restricted, whereas communicative and language skills of children with Williams syndrome are disproportionately high compared to their limitations in the intellectual sphere.

THE PROFILE OF PEOPLE WITH ASPERGER SYNDROME

Asperger syndrome, classified in the area of overall developmental disorders, is characterized by a specific set of psychopathological symptoms typical of the autism spectrum⁴, which consists of empathy impairment, inability to recognize and express emotional states in a socially acceptable manner, difficulties in verbal and nonverbal communication, reduced ability to adapt to changing life situations, repeatable and rigid activity patterns, narrowed interests, and consequently, disturbance of social interactions.

In Asperger syndrome, linguistic disorders are most clearly manifested in the semantic-pragmatic sphere (incorrect interpretation of metaphorical constructions and implicit meanings, formalism, repetitive and pedantic utterances, idiosyncratic use of vocabulary) and in the prosodic sphere (transaccentations, changes

² The symptoms of Asperger syndrome were first described in 1944 by the Viennese psychiatrist Hans Asperger; they were originally termed autistic psychopathy. The currently binding term – Asperger syndrome – was introduced in 1981 by Lorna Wing, who described a group of children and adults, in whom she observed the same profile of features and behaviors that Asperger had presented in his study, i.e.: a naïve and incorrect way of participation in social relations, a tendency to monologize on peculiar subjects, disturbances of prosody and body language, as well as poor motor coordination (Wing, 1981; Pisula, 2000, 26)

³ Williams syndrome (or the Williams-Beuren syndrome) affects one child in 20 000 births, it occurs equally frequently among girls and among boys. It was described in 1961 by J. S. Williams, a New Zealand cardiologist (Prober, 2010).

⁴ Differences between Asperger syndrome and high functioning autism (HFA) have become the subject of vivid discussions. Some argued that Asperger syndrome is a variety of children's autism characterized by the lowest intensity of symptoms, whereby it is identical with so-called high functioning autism (Schopler, 1996), while others suggested that this syndrome be interpreted in connection with the spectrum rather than within it, and that separate diagnostic criteria be created for it (Gillberg and Gillberg, 1989). The prevailing view, which influenced the form of classification of autistic disorders in DSM-5 (Sławińska, 2014) and ICD-11, was that the classification of Asperger syndrome as a separate nosological unit was not justified because the picture of disorders in this syndrome corresponds to symptoms observable in cases of mild autism.

of rhythm, untypical intonation and modulation of utterances, unnatural sound of voice). Semantic disorders result in the inability to understand differences in the meaning of words depending on the linguistic and non-linguistic context, to understand jokes, proverbs, idioms/collocations, poetic texts (Kerbel, Grunwell, 1998), as well as some colloquial phrases and slang expressions. The consequence of disorders in recognizing contextual meanings and difficulties in understanding prosodic cues is misunderstandings in human relations (failure to perceive irony, implied meanings or suggestions)⁵ (Happé, 1995).

Disorders of communicative skills manifest themselves as difficulties in adapting the form of utterances to the social and situational context, inability to distinguish between essential and unimportant information, and as the inability to effectively and acceptably realize communication intentions. In some people with Asperger syndrome, there is an observable tendency to monologize on their favorite topics, without taking account of the reaction of the environment (loquacity), while in others there is a reduction of the formal and semantic complexity of utterances, the inability to fully present the topic, and incoherence of utterances. Communication in Asperger patients is unilateral, which stems from failure to react to comments of other people, and failure to take the interlocutor's viewpoint into account, as well as to observe turn-taking in a conversation.

Disturbances in the communication of people with Asperger syndrome stem from difficulties in identifying true information and false information, from weak understanding of prosodic cues and from failure to understand rules organizing social interaction (tactlessness, excessive sincerity hurting the feelings of other people, the inability to express conventional judgments, inconsistent with the state of affairs), unwillingness to socialize and to follow the activities of the group (absence of the need to be with others, preference for individual activity, a tendency to seclude oneself), the ability to maintain interactions verbally or nonverbally (a poor range of facial and gestural signs, difficulties in regulating physical closeness with others and eye contact with them (staring or avoiding to exchange glances), the inability to read nonverbal signs and interpret contextual content. These difficulties may assume diverse spectra of symptoms in people with Asperger syndrome (Prior, Eisenmajer, Leekam et al., 1998).

⁵ Irony, or the use of words to express the sense contrary to its explicit meaning, is a permanent element of everyday conversation. The recognition of irony has a complex mental representation and requires the ability to read the intention intended by the interlocutor. The receiver of an ironic message should understand that the interlocutor did not convey the message literally and nor did s/he expect his/her utterances to be literally understood (Bryńska, 2011a). The presence of distinct prosodic (especially intonational) clues, such as the lowering of sound pitch, increasing the voice volume, and slowing down of the speech rate indicate the ironic meaning of the message. In addition, contextual cues are used. Studies have demonstrated the connection between abilities resulting from the "theory of mind" and the ability to recognize irony (Kaland, Møller-Nielsen, Smith et al., 2005).

Disorders in verbal behaviors can be also accompanied by specific symptoms of disorders in the motor, emotional and cognitive spheres. Awkwardness and motor discoordination may impede some people from executing manual activities and switching from one activity to another. Special sensory deficits (sense hypersensitivity, e.g. tactile, auditory, sensory), specific perception mechanisms (tendency to pay attention to details, remembering details with concurrent difficulties in recognizing the whole) and memory mechanisms (excellent, photographic memory, remembering pictures, sound sequences, musical pieces, written texts) determine the way of perceiving the reality and interactive behaviors of Asperger patients in the verbal and nonverbal sphere.

Special ways of information processing enable some people with Asperger syndrome to recognize spatial structures particularly well (patterns, systems, calendars) and to be characterized by an extensive encyclopedic but usually reconstructive knowledge in some field⁶. The functions of their answers are usually limited to informing, they often use professional language, manifesting a pedantic aspiration for verbal precision and a predilection for linguistic formalisms. The activities of Asperger patients are characterized by conventionality, attachment to executing actions in a specific way, often inconvenient and impractical, aversion to any changes, and difficulties in accepting novelty.

THE PROFILE OF PEOPLE WITH WILLIAMS SYNDROME.

Williams syndrome, also called Williams-Beuren syndrome, is genetically determined (Ewart, Morris, Atkinon, 1993)⁷. Children are born with low weight, a characteristic facial dysmorphism, defects in the build and functioning of many internal organs⁸, they are irritable and weepy, have problems falling asleep and

⁶ Among people with the autistic spectrum of behaviors, including Asperger syndrome, savants (individuals with special abilities) are encountered twice as often as in other groups, e.g. Daniel Tammet – a man with Asperger symptom, a synesthete, who can make complicated calculations in his memory and name 22 514 digits after the decimal point in the pi; due to his excellent visual memory he learns foreign languages very quickly: he has learned a dozen odd, he has also created his own language and published an autobiography (Tammet, 2010).

⁷ The cause of the syndrome in most cases (95%) is the deletion of from 1.5 to 1.8 million pairs of rules of region q11.23 in chromosome 7, which leads to the removal of 26 to 28 genes. One of the missing genes is the elastin gene – its lacks causes hernias and premature wrinkles. In 60% of cases, microdeletion is of maternal origin, and paternal in 40% of cases. (Ewart, Morris, Atkinon, 1993).

⁸ Williams pointed out children with distinctive features like characteristic facial dysmorphism (35% of individuals had a lessened head circumference, shortened palpebral fissures, hypotelorism, epicanthus, characteristic auricles, broad forehead, the flattened medial part of the face, broad upper jaw and small mandible, long subnasal sulcus, deepened basal base, thick, broad lips, bulging cheeks, blue or green irises with a stellate pattern – “the elfin face”), shorter height, defects in the structure of internal organs and disorders in the functions of different systems in the organism:

sleeping (they wake up at night shouting), learn to walk late (ca. 21 months of age) and so do they acquire self-care activities, they are short in stature (ca. 125–155 cm), grow old prematurely (turn grey, and develop wrinkles at a relatively young age). Despite many ailments, they can achieve relative self-reliance in adulthood with appropriate therapy and environmental support (Cherniske, 2004).

The development of speech in children with Williams syndrome is delayed and proceeds inharmoniously (Brock, 2007; Capirci, 2012). The first words appear after two years of age (Witkowska 2017), which is accounted for by the delayed development of coordination in the movements of the articulatory apparatus, especially the lips and the tongue (Semel, Rosner, 2004; Bellugi, Marks, Bihrlé, 1998). As a result of the defect in production of elastin, which is the main constituent of elastic fibers, vocal ligaments in children with Williams syndrome are less elastic, which is manifested by permanent dysphonia (low, hoarse voice)⁹. At pre-school age, in children with Williams syndrome the dynamics of linguistic development usually accelerates, at the beginning of school education they acquire freedom of speaking, cope with linguistic functions, especially in comprehending colloquial utterances and sentence production. The ability to acquire complex syntactic patterns and the richness of vocabulary should be attributed to their above-average auditory memory and the ability to remember frequently used expressions and rhythmical texts (they learn rhymes by heart, but do not always understand their meaning) and a tendency for echolalic repetitions of hear phrases (“cocktail speech”). They find it easy to remember specialist terms, create original metaphors and analogies; linguistic humor, irony and sarcasm can also be found in their utterances. The rich vocabulary, grammatical complexity and non-standard features of utterance combined with its fluency create an impression of high development potential in the intellectual sphere.

It turns out, however, that delays in the psychomotor development of children with Williams syndrome observable already in early childhood are diagnosed in pre-school age as an intellectual disability, usually severe or moderate (in 55%

metabolic (higher calcium level, diabetes, hypercalciuria, hypercalcemia, which causes frequent vomiting and lack of appetite already in the first year of life, worse body gain), hormonal (subclinical hypothyroidism), cardiovascular (supravalvular aortic stenosis, cardiac murmurs, peripheral pulmonary arterial stenosis, arterial hypertension), neurological, gastroenterological (celiac disease, frequent constipations and diarrheas), urological (vesical diverticula, hydronephrosis, renal artery stenosis, renal cysts, and sometimes renal agenesis or hypoplasia), otolaryngological (stenosed external acoustic duct, excessive accumulation of cerumen, auditory hyperacusia that may result in deafness), visual (hypermetropia, squint, cataract at adult age), as well as stomatognathic (Cherniske, 2004; Kowalska, 2013; Brock, 2007; Zamani, 2012).

⁹ As a result of elastin deficit (elastic fibers responsible for the stiffening of the epiglottis) and the insufficient protection of the larynx, small children with Williams syndrome are at risk of choking, consequently they require the treatment of primary functions (sucking, biting, chewing, swallowing) (Bleszyński, 2016).

of cases the intelligence quotient is below 50 points, in 41% of cases it ranges between 50 and 70 points, and only in 4% of cases it approximates the level of intellectual norm) (Mauer, Bołtuć, 2002). At school age these children cope poorly with abstracting, generalizing, recognizing cause-and-effect relationships, reading, writing and solving simple arithmetical problems, they also have difficulties concentrating, especially when working in a team, but in a situation when they find some subject particularly interesting, they are able to concentrate on and compulsively explore it in conversations with others (Cherniske, 2004).

What is characteristic of Williams syndrome individuals is that despite their intellectual disability they achieve a high level of social and emotional development (Giers, 2011). They perfectly well recognize human faces, interpret behaviors of other people, they are able to initiate and maintain social contacts¹⁰. However, they also reveal specific disturbances in the sphere of social interactions: they do not respect turn-taking roles between the sender and receiver in a dialog or polylogue, they do not adjust themselves to the subject of conversation, and cannot answer the questions with precision (Hutyra 2008, Capirci, 2012). Their extrovertism, emotional stickiness, and a tendency to cross the social distance (e.g. when they stop casual strangers in the street and urge them to have a conversation) can be regarded as tactless (Witkowska 2017, Bellugi 1998, Capirci 2012, Giers 2010). However, their openness, trust, cheerful disposition and friendly attitude to people, including strangers,¹¹ win over those around them.

A distinctive feature of patients with Williams syndrome is their special liking for music (this applies to 90% children), musicality (71%), a large range of attention to musical pieces and ease in remembering songs, also in foreign languages (86%), as well as exceptional auditory sensitivity and the ability to exactly distinguish between sounds, rhythms and tones. Williams syndrome individuals cannot stand noise but they like signing (87%) and performing music, they are also often characterized by absolute pitch and excellent musical memory: hence, despite failing to learn the art of reading music, they perfectly well remember and replay whole musical pieces¹², sing in parts, improvise and compose their own

¹⁰ Individuals with Williams syndrome obtain low scores in tasks that require visual information processing (e.g. when copying drawings they reproduce details with precision but they are unable to interpret the whole picture). It is believed that the chromosomal in Williams syndrome does not affect the left hemisphere while it damages the right one. This thesis, however, is contradicted by their special emotional sensitivity.

¹¹ The high level of anxiety stems from neuroanatomical determinants: children with Williams syndrome have the enlarged amygdala, which is responsible inter alia for fear control.

¹² The motor skill of hand fingers and wrist as well as the protruding mouth may make it difficult for Williams syndrome individuals to play instruments that require high manual dexterity and oral skills (e.g. instruments like flute, clarinet); they prefer to choose percussion instruments (drums, percussion, castanets, tambourine), guitars, accordion or piano. The limitation of manual skills and visual-motor coordination manifested in everyday activities does not preclude learning to play musical instruments (Levitin and Bellugi, 1998).

melodies Musical sounds trigger in them a broad spectrum of emotional reactions (Don, Audrey, 1999; Shuter-Dyson, 1986; Herzyk, 2005), which they share with the audience, before whom they like performing (Lenhoff, 1996; Semel, Rosner, 2003).

On account of high emotional sensitivity, Williams syndrome patients may be even obsessively interested in the health of their close family and friends. In their daily life in the family environment, they try to cope with the requirements; however, in emotionally difficult situations they may manifest behavioral disorders and show symptoms of mental disorders such as hyperactivity, mania, and a predisposition to unjustified anxieties. The feeling of menace or boredom triggers stereotyped behaviors in them (automatic hand movements, rocking back and forth, nodding), fits of anger, rage, or even aggression. Adults with Williams syndrome often change moods with predominantly negativist behaviors, however.

THE DEVELOPMENT PROFILES OF ASPERGER AND WILLIAMS SYNDROME PATIENTS

Determining the specificity of disorders of communicative skills in the cases of Asperger and Williams syndromes for the needs of logopedic diagnosis and treatment requires a detailed assessment of interactive skills in the verbal and nonverbal sphere. Diagnostication should also include the functional assessment of patients' functioning in the motor sphere (including the analysis of the way of producing nonverbal messages - facial and gestural), emotional sphere (by assessing their ability to recognize and express emotional states through verbal and nonverbal behaviors), social (by assessing the ability to initiate, maintain and regulate social contacts), cognitive (by assessing the intelligence quotient on the verbal and nonverbal scale as well as the degree of development of individual cognitive functions, e.g. reception and perception of stimuli with different modalities, memory, attention, thinking, planning, control, etc.), communicative (by describing the possibility of complying with social, situational and pragmatic determinants of interaction) and in the linguistic sphere (by describing the possibility of understanding and using language structures with a varying degree of formal and semantic complexity).

Table 2. Profiles of developmental Disorders in Asperger's Syndrome and in Williams Syndrome

Sphere of development	Profiles of disorders	
	Asperger syndrome	Williams syndrome
Motor development	motor discoordination, disorders in executing self-care activities, difficulties in interpreting and using nonverbal signs (facial and gestural)	motor discoordination, difficulties in executing self-care activities, high skills in understanding and producing nonverbal messages (facial and gestural)
Emotional development	emotional hypersensitivity, difficulties in recognizing nonverbal emotional exponents and in expressing them in a socially acceptable manner	emotional hypersensitivity, good recognition of verbal and nonverbal emotional exponents expressed non-verbally
Social development	difficulties in initiating and maintaining social contacts	ease in initiating and maintaining social contacts
Cognitive development	intellectual norm, disharmonious development of cognitive functions	intellectual disability, disharmonious development of cognitive functions
Development of communicative competence and communicative skills	ability to learn communication rules (communicative competence), disorder in the use of social, situational and pragmatic linguistic rules (communicative skills disorders)	difficulties in learning communication rules (communicative competence), disorder in the use of social, situational and pragmatic linguistic rules (communicative skills disorders)
Development of linguistic competence	disharmonious development of linguistic competence and language skills	disharmonious development of linguistic competence and language skills

Source: Author's own presentation.

It can be assumed that the cognitive profiles and social skills of Asperger patients and Williams syndrome patients are contrastive. The causes of this difference should be sought in neurobiological determinants. People with Williams syndrome first of all use holistic (right-hemisphere) strategies for information processing, whereas the mental functioning of Asperger patients involves their special analytical (left-hemisphere) abilities. This principle also explains the existence of distinct differences in the profile of developmental disorders in people with these syndromes. Social skills and emotional reactions connected with the functioning of the right brain hemisphere are better developed in Williams syn-

drome while high intellectual skills associated with the functioning of the left hemisphere characterize individuals with Asperger syndrome.

The assessment of the development of communicative competence and the state of communicative skills is a significant element of diagnosing a child with developmental disorders and a criterion for differentiating between mechanisms of symptoms of developmental disorders. They may result from deficits within different spheres: motor, emotional, social, cognitive, communicative and linguistic. The specificity of deficits in the development of particular skills profiles the spectrum of neurodevelopmental disorders and determines the direction of therapy.

IMPROVING OF COMMUNICATIVE COMPETENCE AND SKILLS

Human communicative abilities are the result of integration of two kinds of skills – language skill and communicative skill. It should be assumed that the realization of the speech function of each person manifests aspects that are within the scope of shared behaviors and individual behaviors. Shared behaviors comprise linguistic competence and communicative competence. The sphere of individual behaviors is defined by each person's characteristic skills, i.e. the ways of producing text, in which an individual's mental and physical characteristics are revealed.

The purpose of logopedic management in the case of patients with Asperger syndrome and Williams syndrome is to construct an appropriate pattern of interactive verbal behaviors, taking the following factors into account:

1. biological – a person develops the abilities available to him/her on account of his/her neurobiological determinants;
2. environmental – human development depends on how a person is brought up and educated,
3. therapeutic – human development depends on whether properly selected exercises will make it possible to overcome his/her limitations and compensate for developmental deficits;
4. one's own activity – a person, when undertaking diverse activities, acquires new competences and skills.

Both children with Asperger syndrome and those with Williams syndrome find it difficult to learn communication rules and respect them in social interactions. In relationships with others they are characterized by naivety and egocentricity. They are unable to adapt to the social linguistic role, and find it difficult to adjust their utterances to the communicative situation. They cope somewhat better with realizing their intentions. In this situation it is necessary to protect them against exclusion and prepare for social life by making them aware of com-

munication rules and by training their linguistic communicative skills according to S. Grabias's model (2019). Additionally, in the social surroundings (family, school and occupational environment) it is necessary to promote the acceptance of otherness, empathy and tolerance towards others.

There is no one comprehensive therapy that would enable obtaining satisfactory results in improving communicative skills in patients with neurodevelopmental disorders, hence the most effective way is to use different forms at the same time:

1. psychoeducation of the patient and his/her milieu – geared towards identifying difficulties and developing the optimal strategies of behavior in daily life;
2. psychological therapy – geared towards overcoming difficulties in the socio-emotional, cognitive and behavioral sphere;
3. logopedic therapy – geared towards overcoming disorders in linguistic behaviors;
4. occupational therapy – geared towards overcoming disorders in the motor, cognitive, and emotional-social sphere;
5. sociotherapy – geared towards improving social relations;
6. pharmacological therapy - geared towards alleviating symptoms of obsessive-compulsive behaviors, depressive states or aggressive reactions, and towards preventive measures, e.g. in connection with a risk of psychotic disorders.

The task of the speech therapist is to model interactions within a group, to emphasize exceptional abilities of patients with developmental deficits, create conditions for team work, in which the special characteristics of these patients will be desirable, moderate the course of interactions within the group, develop interactive activity in different social, situational and pragmatic conditions, expand the linguistic exponents of these skills (polite expressions, speech acts, thematic vocabulary, etc.).

The process of an individual's socialization begins from learning the pragmatic skill. In contacts with his/her mother, the child, as a message sender, conveys his/her wants and informs about his/her emotional states. Initially this is carried out through non-linguistic (nonverbal) signs, and then, with the acquisition of the language system, through characteristic forms of utterance. In the biological norm, the elements of the system appear around the first year of age, and at the age of six the language system is already fully developed. It grows in the process of interaction taking place in only a few situations of daily life and in one system of social roles determined by the superior role of mother and family members, and the subordinate role of the child. The child's interactive situation changes diametrically with the beginning of school life, when it is necessary to learn new social

roles (new roles appear which arise from equal statuses) and there is a growing need to use monologs. Social skills are the latest to develop. Communicative competences and skills improve throughout an individual's life; for this process to take place, human interactive activity is indispensable.

A pragmatic linguistic skill, through which the sender effectively realizes his intentions, consists of abilities to convey emotions and to realize wants through language, the ability to inform, to reveal the sender's attitude to the reality, and to induce others to act. In the programming of therapy, what appears useful is the typology of conversation strategies proposed by Aleksy Awdziejew [Alosha Avdeyev] (2004), who organizes them according to the functional criterion, i.e. depending on the communication objectives being implemented; he distinguishes four basic types:

1. Information-verification strategies, when the sender's goal is to obtain information contained in the partner's (partners') operational knowledge or to offer the information s/he has and to jointly establish the truth or degree of certainty of the knowledge. Such strategies contain different types of assertive information relationships and modal speech acts e.g. question, confirmation, denial, supposition, certainty, doubt, exclusion;
2. Axiological-emotive strategies, when the sender seeks to introduce and agree with partners on evaluative opinions concerning the-known-to-speakers or hypothetical facts, events, states, persons or other phenomena that can be evaluated. These strategies convey the subjective, emotional attitude to speakers, to objects and presented facts;
3. Behavioral strategies, when the sender wants to persuade his/her partner (partners) to undertake specific actions or to adopt a specific stance towards the action proposed by the person who uses a given strategy. This type of strategy is realized inter alia in the following speech acts: request, demand, proposal, promise, agreement;
4. Metadiscursive strategies, which refer to all verbal actions used by interlocutors to define and specify the course of a given basic strategy, and these serve to check the efficacy of the speech acts applied, and improve conversation through verification and comments.

Perfecting communicative skills in the case of neurodevelopmental disorders should serve to improve effective and socially acceptable communication. Shaping various conversation strategies enables the effective fulfillment of planned intentions. The choice of strategies is subject to certain limitations stemming from communicative conventions accepted in a culture. These conventions are the re-

sult of the social contract, which assumes that in the socialization process everyone learns to behave in a group so that s/he could gain its acceptance and achieve life goals.

CONCLUSION

The unusual characteristics of people with Asperger syndrome and Williams syndrome – their specific cognitive profile – provoke the question about the rules of the functioning of the human mind. Assuming that the human mind is a function of the operation of the human brain, then both developmental deficits and above-average aptitudes should be attributed to the special structure and functioning of the nervous system. Unusually different minds arouse interest but a different way of the functioning of people usually provokes dislike, sometimes hostility, and it most often associated with a mental disease. It should be remembered that in psychiatry, psychology and special pedagogy, mental health and mental norm are theoretical models that are to determine – on the basis of the generally adopted propositions about human biological nature – the borderlines between health and illness, and normal and disordered behavior¹³.

It turns out, however, that these borders are not clear-cut: hence the assessment of an individual's mental health is essentially ambiguous since there is no absolute state of mental health. According to psychiatrists, mental health "is rather a process of man's achieving a state approximating the ideal in the way that is possible under specific social conditions. It can be assumed that on the continuum, whose one end is occupied by mental health and the other by illness, there is an unlimited number of intermediate points. Each individual at a given moment is at some point lying on this line, either closer to the health end, or again closer to the illness end" (Grzywa, 2009).

The location of this point largely depends on the level of tolerance determining the limit of social acceptance of otherness in a particular environment. The creation of conditions so that people with developmental disorders – Asperger syndrome and Williams syndrome – could not only communicate but also enter into satisfying social relationships, start professional activity in accordance with their predispositions and interests, or successfully fulfill diverse social roles, is the task for us all – the people who they live among daily.

¹³ Medical classifications of disorders (ICD-10, DSM-5), helpful in differentiating between normal and pathological behaviors, define the area of pathologies and point out the criteria that enable diagnosis of disorders. Descriptions of disorders contained in these classifications are of auxiliary and organizing character, while the assessment of an individual's health requires taking into account the whole context of his/her functioning (inter alia the past, living conditions, current situation, internal determinants and experiences).

BIBLIOGRAPHY

- Bellugi U., Marks, S., Bihrlé, A., 1998, *Dissociation between language and cognitive functions in Williams Syndrome*, [w:] *Language development in exceptional circumstances*, red. D. Bishop, London, s. 177–189.
- Błęszyński J., Brzozowska-Misiewicz I., 2016, *Zarys terapii logopedycznej dzieci z zespołami wrodzonymi. Dziecko z zespołem Williamsa*, [w:] *Wczesna interwencja logopedyczna*, red. K. K. aczorowska-Bray, S. Milewski, Gdańsk, s. 438–446.
- Brock J., 2007, *Language abilities in Williams syndrome: A critical review*, „Development and Psychopathology”, 19, s. 97–127.
- Capirci O., 2012, *Language Development in Williams Syndrome A Case Study*, „Cognitive Neuropsychology”, 7, s. 1017–1040.
- Cherniske E.M., 2004, *Multisystem Study of 20 Older Adults with Williams Syndrome*, „American Journal of Medicine”, 131(3), s. 255–264.
- Dobek-Ostrowska B., 1999, *Podstawy komunikowania społecznego*, Wrocław.
- Don J., Audrey E., 1999, *Music and Language Skills of Children with Williams Syndrome*, „Child Neuropsychology”, 5, s. 154–170.
- Ewart A.K., Morris C.A., Atkinon D., 1993, *Hemizygoty at the elastin locus in a developmental disorder, Williams syndrome*, „Nature Genetics”, 5, s. 11–16.
- Giers M., 2011, *Zespół Williamsa*. Gdańsk.
- Gillberg C., Gillberg I.C., 1989, *Asperger syndrome – some epidemiological considerations: A research note*, „Journal of Child Psychology and Psychiatry”, 30, s. 631–638
- Grabias S., 2007, *Język, poznanie, interakcja*, [w:] *Mowa. Teoria – praktyka*, t. 2, *Język, interakcja, zaburzenia mowy. Metodologia badań*, red. T. Woźniak, A. Domagała, Lublin, s. 355–377.
- Grabias S., 2019, *Język w zachowaniach społecznych. Podstawy socjolingwistyki i logopedii*, Lublin.
- Grzywa A., 2009, *Pogranicza psychiatrii. Drogi i bezdroża umysłu*, Lublin, s. 13–14.
- Happé F.G.E., 1995, *Understanding minds and metaphors: insights from the study of figurative language in autism*, „Metaphor and Symbol”, 10, s. 275–295.
- Herzyk A., 2005, *Wprowadzenie do neuropsychologii klinicznej*, Warszawa.
- Herzyk A., Borkowska A., red., 1999, *Neuropsychologia emocji. Poglądy – badania – klinika*, Lublin.
- Howell W.S., 1982, *The emphatic communicator*, Belmont, California.
- Hutyrta T., Moweszed K., Stawiarski A., 2008, *Dziecko z zespołem Williamsa*, [w:] *Dzieci chore, niepełnosprawne i z utrudnieniami w rozwoju*, red. B. Cytowska, B. Winczura, A. Stawiarski, Kraków.
- Hymes D., 1980, *Socjolingwistyka i etnografia mówienia*, przeł. J. Arnold, [w:] *Język i społeczeństwo*, red. M. Głowiński, Warszawa, s. 41–82.
- Järvinen-Pasley U., Bellugi J., Reilly D.L., Mills A., Galaburda A.L., Reiss J.R., Korenberg, 2008, *Defining the social phenotype in Williams syndrome: A model for linking gene, the brain, and behavior*, „Development and Psychopathology”, 20, s. 1–35.
- Jones W., Bellugi U., Lai Z., 2000, *Hypersociability in Williams syndrome*, „Journal of Cognitive Neuroscience”, 12, s. 30–46.
- Kaland N., Møller-Nielsen A., Smith L., Mortensen E. L., Callesen K., Gottlieb D., 2005, *The Strange Stories test – a replication study of children and adolescents with Asperger syndrome*, „European Child & Adolescent Psychiatry”, 14, s. 73–82.
- Kerbel D., Grunwell P., 1998, *A study of idiom comprehension in children with semantic-pragmatic difficulties. Part II: Between-groups results and discussion*, „International Journal of Language and Communication Disorders”, 33, s. 23–44.

- Korniszewski L., 2005, *Dziecko z zespołem wad wrodzonych. Diagnostyka dysmorfologiczna*, Warszawa.
- Kowalska J., 2013, *Zespół Williamsa – fenomen dzieci elfów*, [w:] *Nieznane? Poznane. Zaburzenie rozwojowe u dzieci z rzadkimi zespołami genetycznymi i wadami wrodzonymi*, red. M. Buchnat, K. Pawelczak, Poznań, s. 137–157.
- Maurer A., Bołtuć I., 2002, *Dzieci z zespołem Williamsa. Diagnoza i terapia. Wskazówki dla rodziców i nauczycieli*, Kraków.
- Meyer-Lindenberg A., Mervis C.B., 2007, *Neural mechanisms in Williams syndrome: a unique window to genetic influences on cognition and behavior*, „Nature Reviews Neuroscience”, 7, s. 380–393.
- Mroziak J., 1992, *Równoważność i asymetria funkcjonalna półkul mózgowych*, Warszawa.
- Naylor L., Van Herwegen J., 2012, *The production of figurative language in typically developing children and Williams Syndrome*, „Research in Developmental Disabilities”, 33, s. 711–716.
- Panasiuk J., 2012, *Afaza a interakcja. TEKST – metaTEKST – kontTEKST*, Lublin.
- Panasiuk J., Kaczyńska-Haładyj M., 2015, *Postępowanie logopedyczne w przypadku dorosłych z zespołem*, [w:] *Logopedia. Standardy postępowania*, red. S. Grabias, J. Panasiuk, T. Woźniak, Lublin, s. 395–427.
- Panasiuk J., 2017, *Standardy i wskazówki przygotowywania oraz adaptacji narzędzi diagnostycznych i procesu diagnostycznego dla dzieci i młodzieży ze spektrum autyzmu i zespołem Aspergera*, [w:] *Diagnoza specjalnych potrzeb rozwojowych i edukacyjnych dzieci i młodzieży*, red. K. K rakowiak, Warszawa.
- Perovic, A., Wexler, K., 2010, *Development of verbal passive in Williams syndrome*, *Journal of Speech, Language, and Hearing Research*, 53, s. 1294–1306.
- Pisula E., 2000, *Autyzm u dzieci. Diagnoza. Klasyfikacja. Etiologia*, Warszawa.
- Prior M., Eisenmajer R., Leekam S., Wing L., Gould J. and Ong B., 1998, *Are there subgroups within the autistic spectrum?: a cluster analysis of a group of children with autistic spectrum disorders*, „Journal of Child Psychology and Psychiatry”, 39, 6, s. 893–902.
- Schopler E., 1996, *Are autism and Asperger syndrome (AS) different labels or different disabilities?*, „Journal of Autism and Developmental Disorders”, 26, s. 109–110.
- Semel E., Rosner S.R., 2004, *Understanding Williams Syndrome – Behavioral Patterns and Interventions*, „British Journal of Education Psychology”, 74, s. 640–641.
- Sławińska A., 2014, *Zespół Aspergera u osób dorosłych – zbieżność z innymi zaburzeniami, zaburzenia współwystępujące i problemy towarzyszące*, „Psychiatria i Psychologia Kliniczna, 14(4), s. 304–307.
- Tammet D., 2010, *Urodziłem się pewnego błękitnego dnia. Pamiętniki nadzwyczajnego umysłu z zespołem Aspergera*, Kraków.
- Thomas, M.S., 2010, *Language acquisition in developmental disorders*, [w:] *Language acquisition across linguistic and cognitive systems*, red. M. Kail, Amsterdam, s. 67–80.
- Thomas, M., Karminis T., 2012, *What is typical language development*, „Language Learning & Development”, 6, s. 162–169.
- Wierzba J., red., 2017, *Medycyna Elfów: kompendium wiedzy o zespole Williamsa*, Wrocław.
- Wing L., 1981, *Asperger's syndrome: A clinical account*, „Psychological Medicine”, 11, s. 115–129.
- Witkowska J., 2017, *Charakterystyka funkcjonowania językowego dzieci z zespołem Williamsa*, [w:] *Medycyna Elfów: kompendium wiedzy o zespole Williamsa*, red. J. Wierzba, Wrocław, s. 193–201.
- Zamani H., Babazadeh K., Fattahi S., 2012, *Williams-Beuren's Syndrome: A Case Report*, „Case Reports in Medicine”, 11, s. 1–4.