




OLGA PRZYBYLA

University of Silesia in Katowice

Chair of Linguistic Didactics and Polish Literature, Speech Therapy Center

 0000-0001-8924-3102

Facilitated Communication in Autism Case Study

ABSTRACT: The article presents the case study of a sixteen-year-old girl with autism, who communicates by means of one of alternative and augmentative communication methods: Facilitated Communication, and the analysis of the results of working with the child. The theoretical part (two sections) presents the essence of interpersonal communication and focuses on the role of word in familiarizing oneself with the world. The paper also discusses relationships between disorders of cognitive functions and the development of communication skills in order to introduce Facilitated Communication as an alternative method of communication used among others by autistic persons.

KEY WORDS: communication, autism, autism spectrum disorders, Facilitated Communication, alternative and augmentative communication

Brain and communication

Owing to the experience of communicative reciprocity, it is becoming possible to cognize the world of other people. Meeting another person is a contribution to realizing that each of us lives in our own separate inner world. This open space requires finding a way to describe it because all kinds of communication acts unite a person with the world. A person usually gets to know and gets acquainted with the world by means of words since his/her cognitive structures are closely associated with the ability to use language. Verbal expression allows one to actively participate in social life and develop one's own mental activity.

Throughout his/her life, a person produces all manner of narratives that show how the world is mediated by him/her and express individual experience. How we put our language to use is, according to John R. Searle (2010), a manifestation of mental capacities that are biologically more fundamental than language itself. Therefore, in order to fully understand how language functions, we have to show how it is ingrained in these abilities. A different functioning of

any of the complex perceptual processes directly translates into the state of cognitive representation since “many language problems are special cases of problems of the mind” (p. 35).

Many a time multifaceted obstacles sustaining between the brain and language stem from erroneous perceptual experience which is a significant part of both, one’s functioning within the scope of verbal communication and mastering the use of language. The course of complex mental processes “depends on many cooperating brain areas” (Kotapka-Minc, 2004, p. 16). The conditions of the structure and function of the brain once they are altered, result in a series of irregularities and stimulate compensation mechanisms (replacing the space devoid of experiences with a different one) which serve as the foundations for recreating the lost system or – as is the case with a little child – building it anew and developing. The brain areas responsible for typical human abilities like the ability to use language, the ability to plan, and awareness of oneself, evolutionally speaking, quite recently, namely about 1.5 million years ago.¹

The goal of this study is to present a method that enables an autistic person to communicate with people around him/her, and furthermore, to present selected stages in building narrative competence (cf. Trzebiński, 2001). A person, when creating narratives, tells him-/herself about the world and “explains” it to him-/herself through language, which directly leads to the conclusion that narrative is the way of understanding the world and a form of participating in it.

However, it is not always possible. Autism belongs to the group of developmental disorders,² whose symptoms are of neurological origin (Minshew & Keller, 2010). Disorders of cognitive and social functions consequent upon changes in the anatomic structures of the brain lead to a deficiency in the ability of persons with autism to communicate interpersonally and are often connected with the mental and social disintegration of an individual.

Structural and functional studies of the brains of persons with autism carried out over the recent dozen or so years (Minshew & Keller, 2010) most of all point to very serious problems in sensory processing that prevent them from functioning properly. As a consequence, it becomes almost impossible for them to establish relationships with others. On the basis of studies on the brain and the brain organization of higher mental functions (including the theory of functional system (Łuria, 1967), whose source was discoveries in physiology and then in neuropsychology), we know that the brain takes part in performing higher nervous functions as a functionally differentiated whole. This means that all irregularities at the level of cognitive development and the frequently co-occurring neurologi-

¹ Cf. among others: DENNET, 1996; Dunbar, 1996; Edelman, 1992; Gazzaniga, 2011; Searle, 2004.

² In DSM IV they are termed *pervasive developmental disorders or autism spectrum disorders* (ASD). American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders. Text revision*. Washington, DC 2000.

cal, emotional and motor disorders require the stimulation and restructuring of the entire complex functional system. The brain functioning is conditioned by genetic factors and adaptation to the environmental factors of the prenatal and perinatal phases, to subsequently include social environment, thereby intensifying the interaction of genes with multimodal external experiences. The complex process of self-organization of the functional system means continually getting to know reality owing to sensations arising as a result of direct effect of stimuli from the external world or from inside the organism upon receptors (nerve endings). Neuronal connections and cortical maps are remodeled by experiences absorbed from external or internal stimuli, their perception, adaptation and integration depending not so much on the stimuli as on responses to them (Przybyła, 2016, pp. 100–101).

This is the essence of developmental anomalies in persons with autism. It stems from the discrepancy between inadequate (because not yet identified) responses coming from the body (especially important in critical periods of childhood) and the social influence. On the basis of many years of research, neurologists and neuropsychiatrists stress that the architecture of the cortex is modelled upon entering into social environment and from the outset dependent on the relation of attachment. The successful self-organization of the brain is defined in the context of relationships with the *Other* and is identical with the interaction theory (Schore, 1996; Spence, Shapiro, & Zaidel, 1996).

This means that it is necessary to seek ways to overcome difficulties in the area of sensory processing for cognitive representation to develop in the mind (cf. Hickok, 2016; Temple, 2016). Seeking to achieve the proper level of sensory modulation and corresponding diversification of stimuli is the principal objective of actions contributive to building mutual communication. Owing to this, a person with autism, frequently having limited capacities of direct verbal activity, will be able to experience relationships with another person and will learn to express communicative intentions via his/her available modalities: words, gestures, facial expressions, pictures, and all manner of auxiliary devices/. For it is important that a child, regardless of his/her functional condition, should have an opportunity to communicate with others. This opportunity is provided, among others, by Facilitated Communication.

The method of Facilitated Communication (FC)³ was developed by Rosemary Crossley in the early 1980s in Melbourne, Australia. Initially, it was used to communicate with non-verbal persons with cerebral palsy; later, successful attempts were made to use it in developing the communication abilities of patients with / profound mental dysfunctions, including persons with autism. In the 1990s, FC was widely promoted by Professor Douglas Biklen of Syracuse University, NY, who, together with Rosemary Crossley, included it in the scope of Alternative and

³ Hereinafter referred to as FC.

Augmentative Communication (AAC), stressing that the method was addressed to persons who require communication assistance,⁴ because they are non-verbal or with highly disordered speech (Łasocha, 2006, p. 7).

In its definitional terms, FC was devised to facilitate expressing communication by supporting the hand, wrist, elbow or arm of the communicator and by providing opposing resistance to help the patient select letters on the letter board, typewriter, and computer with the Word program, or on a small, portable computer (Smith & Belcher, *Facilitated...*).

Those who study the issue of motor disorders in autism term FC as a “strategy” for improving motor functions, enabling a person to point to or touch objects, pictures or letters in order to communicate (Pisula, 1995).

In Poland, in accordance with the terminology proposed by the Association “Speaking without Words” [Stowarzyszenie „Mówić bez słów”], a substitute term has been introduced: “supportive ways of communication” understood as “all means by which persons with aphasia, poorly understanding speech, can express their needs, thoughts, and emotions” (Łasocha, 2006, p. 12). Facilitated Communication is one such measure, owing to which persons with aphasia can communicate with the environment. FC can be an addition, supplement or reinforcement of speech and can guarantee a supplementary way of communication.⁵ It is an alternative (often the only) form of communication with the environment available to persons with autism who did not develop speech (Rimland, 1991, p. 6).

It is important that a child should have opportunities to communicate with others. That is why it is absolutely necessary to create situations in which the child could actively influence them through his/her utterances. The 16-year-old girl with autism whose case is discussed in the article expresses her need to communicate as follows:

⁴ Communication assistance consists in: positioning of the body, tracking the keyboard with simultaneous provision of feedback information to the writing person (pronouncing each letter or word, or repeating the whole utterance); verification whether this is what she/he wanted to communicate, asking appropriate questions, assigning areas for further work. This entails supporting the FC user in controlling his/her behaviours, and stifling behaviours that disrupt communication: aggression, self-aggression, self-stimulation, and echolalia. Cf. ŁASOCHA, 2006, p. 10.

⁵ In 2000 the Facilitated Communication Institute, University of Syracuse, NY, produced a document describing the standards of Facilitated Communication. The project was coordinated by Marilyn Chadwick, and jointly edited with Mayer Shevin. Many FC specialists were invited to collaborate – mainly from the United States and Australia, among others the author of the method Rosemary Crossley, and its greatest promoter and founder of the Institute, Douglas Biklen. The document was prepared based on earlier versions of the method and is composed of three fundamental parts: I. Fundamental Principles and Best Practices; II. Framework for Training and Technical Assistance; III. Facilitator Competencies with attached materials (books, brochures, etc.) together with a reference list. Source: Facilitated Communication Institute: *Facilitated...*

...First, a feeling of relief that you'll get something off your chest, second, a person without speech is like, truth to tell, without intelligence and besides it, first of all, in speech that there is a whole arsenal of human experiencing of our autistic world. So dare speak through the keyboard...

Fundamental to the normal psychosocial development is being able to enter interaction(s) with another person. The structure of human knowledge about the world is determined by the narrative way of seeing reality. As Jerzy Trzebiński (2001) writes:

Let us agree that the term “understanding something” will mean the formation in our mind of cognitive representation, popularly called the “mirroring” of an object, phenomenon or state that makes up reality. Consequently, understanding will mean both noticing a simple physical object [...], and realizing its presence [...]. In both cases, understanding means the final product of cognitive processes (p. 87).

Therefore, cognition is constructive rather than reproductive, whereas the process of understanding means interpreting the data generated by the mind since understanding reality involves knowledge, emotions, and values, and is associated with participation in culture.⁶ Hence, a close attention must be given to creating narrative forms that enable the release of communication abilities. The most significant in the work of FC is the conclusion that the reality being created is understood by a person with autism in the form of his/her own history/story, of which she/he is a part.

Dialogue with the Other – A Case Study

The subject of studies was a 16-year-old girl, a first-grade student in the junior high school for children with autism. In addition to autism, Iwona, which is the subject's first name, has also the underdeveloped fingers of the right hand.

The girl walks by herself, and has well-developed visual-motor coordination. She likes games and playing, she can do all the exercises after they are exactly described verbally and demonstrated by the teacher. She finds it difficult to use art tools because of underdeveloped fingers, yet the girl takes pains to cooperate with the teacher and she achieves results in cutting with scissors, pasting glue, and holding a brush.

⁶ “Cognitive pattern is a model of a certain element of reality performing two interrelated basic and inseparable functions towards this reality: representation functions and functions of the rules of processing information about this reality” (cf. Trzebiński, 2001, p. 91).

Her ability to self-service is at a high level. She not only signals physiological needs but uses the toilet by herself and performs the functions of personal hygiene. She does not need any help when eating a meal, she eats in a very orderly manner, using cutlery.

Iwona follows commands, emulates, and is able to group objects by several common features (colour, shape, and size), shows differences between objects, pictures, and symbols. She can put together a picture consisting of more than ten elements, compose a logical sequence of events in a picture story; she correctly assigns labels to pictures, can reproduce arrangements of building blocks and mosaics on the models, she can add, subtract, and is aware of current time. She is also musically gifted: she composes her own melodies on the organ, remembers the texts of songs, rhythmical patterns, and likes listening to classical music.

However, social contacts are the subject's serious problem. Despite progress in learning, the behaviours that are worrying and impede work are: periodic attention disorders, emotional lability, or inability to cope in difficult stressful situations. There is an observable cyclical recurrence of aggressive behaviours, intensification of tics, obsession-compulsions, shouting, delayed echolalia, or destructive behaviours (destroying books, class registers, pulling, throwing objects). There are also difficult-to-control aggressive behaviours (grabbing the teacher's hair, pulling down fellow girls' spectacles or hair rubber bands), which makes it impossible to conduct classes and adversely affects other students. Very often, these are difficult-to-predict reactions inadequate to the situation.

In addition to the school environment, these behaviours disrupt functioning in the family environment, too. Mother finds it increasingly difficult to control her daughter's negative behaviours. She complains that Iwona no longer obeys her, manipulates her, and does not respond to any prohibitions and punishments.

Utterances in Facilitated Communication

The girl's speech is echolalic. Spontaneous utterances are a form of monologizing or an echo of the phrases heard earlier, they are out of the social context, which is why attempts were made from the beginning to develop an alternative way of communication.

At the first stage of education, the student used pictograms, but she soon proved that she could progress to the next communication stage, which is learning letters. In Iwona's case, the Glenn Doman Method, that is, learning to read globally, proved correct. Owing to this method, Iwona mastered the knowledge of letters perfectly. The next step was to initiate the attempts to write with assistance or to use Facilitated Communication. During the preliminary exercises of

signing, the girl became acquainted with the arrangement of the letters on the keyboard and improved her skill of proper pressure.⁷

As a consequence of activation and stimulation of visual-auditory and proprioceptive modalities acceptable to the girl, the mechanisms of neuroplasticity and neurocompensation were stimulated, which led in the first place to the formation of dialogue forms, and with time to narrative forms. As language difficulties were overcome, the girl's great sensitivity and emotionality emerged.

In the case of Iwona, introduction of cards with the words "YES" and "NO" was important, as it allowed her to quickly answer simple questions, for example:

Question: *Iwona chcesz skorzystać z toalety?*

Q: *Iwona, do you want to use the toilet?*

Answer: TAK.

A: YES.

or:

Q: *Idziemy dzisiaj na spacer?*

Q: *Are we going for a walk today?*

A: NIE.

A: NO.⁸

This enabled developing the girl's awareness of her own needs and learning to decide what she wanted (to do).

The next stage of "conversations" in FC was to develop the girl's ability to express her preferences for her favourite school meals and to train the ability to answer specific questions connected with the subject of a lesson. With the release of communication activities, her self-awareness developed. A manifestation of her maturity and awareness of her condition is the following utterance by Iwona:

[...] *aparatura autyzmu nie działa według ludzkiego rozumu, i to że zachowuje się okropnościowo akurat nie jest moja zasługa, ale zasługa otoczenia i zmian w nich, to znaczy że zachowuje się zależnie od otoczenia i od tego jaka atmosfera panuje w domu, od tego czy się wyśpię i od działania kropelek. Raz jest lepiej, a raz gorzej. Przy takiej pogodzie nawet zdrowi mają dość, a co dopiero tacy jak ja...*

[...] *apparatus of autism does not work according to human mind and the fact that I behave atrociously is not my a credit but a credit of the environment and changes in them, it means that I behave depending on environment and on what atmosphere is at home,*

⁷ During the work, the assisting person (facilitator) sits sideways to the writing person (in this case Iwona) and gently holds a palm of the writing person so that the hanging fingers (or a finger) could point to the letters of the computer keyboard. In the initial stages, the work takes little steps in order that the person with aphasia could experience a communication success, that is, express his/her own intentions.

⁸ The article presents the original records of Iwona's utterances.

on whether I sleep well and on the effect of drops. Sometimes it is better, sometimes worse. At this weather even healthy people have enough, to say nothing of such as me...

The girl has been using FC for five years. The first texts Iwona wrote were one-word replies. They had no clear grammatical subject, their subject matter was illogical, chaotic, and inconsistent. Currently, Iwona manages to form complete utterances. The texts produced by the girl in question can be regarded as coherent and logical. Her favourite form of utterance is letter. More importantly, the texts are written by her single-handedly, and she does not require auxiliary questions with clues from the teacher. For example, here is a letter addressed to the teacher who has recently given birth to a daughter (here the English translation is followed by the original Polish version):

Hello Mother of the newlyborn Babey.

The rest is not important only it matters and? don't worry about anybody else but her. I enjoy yor happiness and happiness in whole family to Gurgul (Cooer) in family all. We in conscience and soul are with you and your expanded family. Yor hapiness is our happinxs. There is no place for exaggeration so do your best to give this daughterlove so much calling with happiness and from the heights of joy let's rejoice over Martusia who weighs 3 kilos 400.

Together with you, are pleaxsed Ula and Nina. We feel good together and you don't worry about us because your will was fulfilled and Ula duly tries to substitutxe for you. Together with her we control the situation and it works well. It is so sensational that together we form the class? – you and we. It is a class over distance but after al it is only temporary.

Know tht I already quite well write with the shift key and it makes beatiful big letters. Know also tht possibly I know how to do varios great things because Ms Nina extremely decoratses ourx clas.

On the occasion of the upcoming Christmaswish you many good moments spent in a family atmosphere, see the first starr and cuddle each other. Kindest regardxs and warm hugs.

Witaj Mamusiu nowonarodzonego dzieciatka.

Reszta jest nie wazna tylko ono się teraz liczy i nikim innym się nie martw i nie troszcz jak tylko nim. Raduje się z Twojego szczęścia i szczęścia w całej rodzinie Gurgulowi w rodzinie wszystkiej. Razem sumieniem i dusza jesteśmy przy tobie i Twojej powiększonej rodzinie. Wasze szczescie jest naszym szczęściem,. Tu nie ma miejsca na przesadzanie wiec dawajcie z siebie wszystko aby dac tej corezczemilosci tyle wolala ze szczescia i z samych wyzyn radosci radujemy się z Martusi co wazy 3 kilo 400.

Razem z wami ciesza się także Ula i Nina. Dobrze nam razem i ty się o nas nie martw bo wola twoja zostala spelniona i Ula godnie stara się Cie zastepowac. Razem z nia panujemy nad sytuacja i dobrze nam to wychodzi. To takie rewelacyjne ze razem tworzymy klase ty, i my. To klasa na odleglosc ale przeciez to tylko przejsciowe.

Wiedz ze pisze juz pewnie z shiftem i wychodza z tego piekne duze litery. Wiedz także ze ewentualnie wiem już jak robi się rozne fajne rzeczy bo pani Nina szalenie ozdabia nasza klase.

Z okazji zbliżających się Świąt Bożego Narodzenia życze Wam wielu dobrych chwil spędzonych w rodzinnej atmosferze zobaczcie pierwszą gwiazdke i przytulcie się do siebie. Pozdrawiam graco i sciskam serdecznie.

This student has rich active vocabulary. She obeyed the rules of the letter genre and used diversified syntax. The girl has mastered the parts of speech on a good level because in her utterance she used, in addition to verbs and nouns, adjectives, a numeral and adverbs. She correctly introduced polite expressions/formulae into the text and identified herself with the text sender, correctly using verbs in the first person singular. The quality of the text in respect of correct spelling and punctuation was taken care of by the facilitator. The girl's utterance is rich in information conveyed and it reflects the rich internal world of autistic persons. The narrative of the letter demonstrates greater sensitivity, empathy, and understanding of the feelings of another person. Owing to the opportunity to express her own opinions by means of the FC method, Iwona has become an equal participant and partner in family and classroom events.

The high level of empathy and maturity in building the girl's communication relationships is confirmed in the letter addressed to her brother. The text is heterogeneous. The first two fragments function as an introduction and elaboration, while the ending of the utterance has a form of a request to the brother:

Hi my wo cool brother Au today I decided to write a letter. I would like to explain reason that is the motives why autism doesn't let me talkx with youx although I would like this very much but something alwaysx disturbs us and understand that I am not as unreasonxble as you think.

My dear little brother you have been very dear to me and I always could count on you you know that we have hard life and fate always has tried us xseverely so we must keepx together so as nobody can separate us. You know what is going on in our family and that is why I can tellx you everything that's bothringx me.

Czesc mój wo fajny braciszku Au dzisiaj postanowiłam do ciebie napisac list.

Chciałabym ci wyjaśnić powód to znaczy motywy dlaczego autyzm nie pozwala mi na rozmowe z toba mimo ze bardzo bym tego chciała ale cos nam ciagle przeszkadza i zrozum ze ja nie jestem tak nierozsadna jak sobie myslisz.

Braciszku mój mily zawsze byles mi drogi i zawsze mogłam na ciebie liczyć sam wiesz ze zycie mamy ciezkie i los nas zawsze xdoswiadczal dlatego musimy się trzymac razem tak by żadna sila nas nie rozdzielila. Ty wiesz co w naszej rodzinie się dzieje i dlatego tobie mogę powiedziec wszystko co mi lezy na sercu.

The letter ends with the question to the brother: *Would you like to write on computer with me some time?* Czy chciałbyś kiedyś pisać ze mną na komputerze?, because the girl has never before communicated with her mother or brother in this way. Her fears stem from the fact that brother Irek does not accept her autism.

Iwona does not, however, want to remain passive and addresses a specific order to her brother: *You hold my hand and I will help you further, dear brother irek. Ty mnie trzymaj za reke a ja ci pomoge dalej kochany bracie irku.*

The main body of the letter is the description of Iwona's autism, which prevents her from a verbal contact with her brother. The text is full of emotions and feelings:

- *braciszku mój mily, zawsze byłeś mi drogi; my nice brother, you have always been dear to me*
- *Zycie mamy cieżkie i los nas zawsze xdoswiadczał; we have hard life and fate always has tried us xseverely*
- *tobie mogę powiedziec wszystko co mi lezy na sercu. I can tellx you everything that's bothringx me.*

We cannot fail to notice the great number of parts of speech present in the text: many nouns, verbs, and adjectives. The sentences are logically connected in terms of content, forming a coherent text (punctuation marks were suggested by facilitators assisting Iwona in writing).

In Iwona's case, the improvement in expressing communication effected a change in her behaviour: it? developed inner balance, owing to which aggressive behaviours were reduced. The girl started writing about them, which evidences that she is aware of her improper behaviour.

The analysis of the letters reflects the rich world of this child. The development of communication activities through FC releases the sense of self-awareness, results in ridding oneself of isolation, thereby being a chance to establish contacts with the surrounding environment and strengthen emotional bonds.

Some summarizing remarks on experiencing communicative reciprocity

Communication opens up “new prospects and new capabilities both in the process of learning and acting, begins to dominate previous experiences and begins to transform them” (Sacks, 1990, p. 74). It is implemented in linguistic actions, which are essentially a set of complex neurophysiological functions involving many cerebral structures. If they are achieved by an individual, this enables him/her to establish and maintain interpersonal relationships and co-participation in social life. This fact causes a person to enhance his/her development by collecting and organizing knowledge about him-/herself and the surrounding world. In the situation when a child does not feel the need to enter social interactions, the work on developing his/her ability to speak and understand appears to be a considerable problem. The child then has difficulties decoding messages, interpreting them correctly and, as a result, may react inadequately to them.

Despite difficulties in contacts with an autistic child, we should seek to stabilize often dysregulated sensory stimuli. A successful way of developing interactive abilities is to stimulate neuroplastic and neurocompensatory mechanisms by active participation and penetrating observation of the child's reactions and behaviours. Identification of the levels of sensory modalities acceptable to a person with ASD enables his/her harmonious functioning. FC, owing to which the persons participating in it remain in a relationship with one another, enables the explanation of seemingly inappropriate behaviours of an autistic person (and incomprehensible to the environment), for instance, failure to understand the reasons for his/her aggression or self-aggression. The work with this method provides persons with autism with the way of expressing their opinions on matters that concern them directly, owing to which they can co-decide about themselves and their lives. Experiencing communication also gives them an opportunity to discern the impact of their words on their environment and to take a greater responsibility for their own behaviour. It contributes to revealing the intellectual potential of the writing patient, thereby enabling the development and enhancement of his/her cognitive functioning.

Facilitated Communication is a way of developing the ability to communicate, thus making possible the path of therapeutic management because it contributes directly to exchanging ideas and experiences. It gives autistic persons a chance to establish contact with other people and is a form of communication with the external world.

Bibliography

- American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders. Text revision*. Washington, DC 2000.
- DENNET, D.C. (1996). *Kinds of Minds. Toward and Understanding of Consciousness*. London: Basic Books.
- DUNBAR, D. (1996). *Grooming, Gossip and the Evolution of Language*. Cambridge: Harvard University Press.
- EDELMAN, G. (1992). *Bright air, brilliant fire of the Matter of the Mind*. New York: Basic Books.
- Facilitated Communication Institute: *Facilitated Communication Training Standards*, Syracuse 2000. Retrieved from: <http://soeweb.syr.edu/thehci> (access: 15.06.2014).
- GAZZANINGA, M.S. (2011). *Who's in charge? Free Will and the Science of the Brain*. New York: Ecco.
- HICKOK, G. (2016). *Mit neuronów lustrzanych*. Kraków: Copernicus Center Press.
- KOTAPKA-MINC, S. (2004). Funkcje poznawcze i ich zaburzenia. In: A. SZCZUDLIK, M. BARCIKOWSKA, & P. LIBERSKI (Eds.), *Otępienie* (pp. 11–22). Kraków: Wydaw. Uniwersytetu Jagiellońskiego.
- ŁASOCHA, A. (2006). Wprowadzenie do Metody Ułatwionej Komunikacji. In: M. WRONISZEWSKA, M. WRONISZEWSKI, & O. FRĄCZAK (Eds.), *AUTICA. Materiały na temat autyzmu* (no. 2, pp. 9–14). Warszawa.

- ŁURIA, A.R. (1967). *Zaburzenia wyższych czynności korowych wskutek ogniskowych uszkodzeń mózgu* (A. KOWALISZYN, Trans.). Warszawa: PWN.
- MINSHAW, N.J., & KELLER, T.A. (2010). The nature of brain dysfunction in autism: Functional brain imagine studies. *Current Opinion in Neurology*, 23(2), 124–130.
- PISULA, E. (1995). Autyzm i ułatwiona komunikacja. *Nowiny Psychologiczne*, 3, 33–34.
- PRZYBYŁA, O. (2016). Procesy przetwarzania sensorycznego w stymulowaniu rozwoju małego dziecka. In: K. KACZOROWSKA-BRAY, & S. MILEWSKI (Eds.), *Wczesna interwencja logopedyczna* (pp. 100–119). Gdańsk: Harmonia Universalis.
- RIMLAND, B. (1991). Facilitated Communication reports generate heated controversy. *Autism Research Review International*, 5(1), 5.
- SACKS, O. (1990). *Zobaczyć głos*. Poznań: Zysk i S-ka.
- SCHORE, A.N. (1996). The experience-dependent maturation of a regulatory system in the orbital prefrontal cortex and the origin of developmental psychopathology. *Develop Psychopathol*, 8, 59–87.
- SEARLE, J.R. (2004). *Mind: A Brief Introduction*. Oxford: Oxford University Press.
- SEARLE, J.R. (2010). *Umysł. Krótkie wprowadzenie* (J. KARŁOWSKI, Trans.). Poznań: Rebis.
- SMITH, M.D., & BELCHER, R.G. *Facilitated Communication and Autism. Separating fact from fiction*. Retrieved from: www.csaac.org/pub-fac.htm (access: 14.09.2016).
- SPENCE, S., SHAPIRO, D., & ZAIDEL E. (1996). The role of the right hemisphere in the physiological and cognitive components of emotional processing. *Psychophysiol*, 33, 112–122.
- TEMPLE, G. (2016). *Mózg autystyczny. Podróż w głąb niezwykłych umysłów*. Kraków: Copernicus Center Press.
- TRZEBIŃSKI, J. (2001). Narracja jako sposób rozumienia świata. In: B. OWCZAREK, Z. MITOSEK, & W. GRAJEWSKI (Eds.), *Praktyki opowiadania* (pp. 87–125). Kraków: Universitas.