

Chapter 15

ASPECTS OF PRAGMATIC COMMUNICATION DIFFICULTIES IN PERSONS WITH SYMPTOMATIC SPEECH DISORDERS

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ABSTRACT

The principal objective of the presented paper is to introduce, from the theoretical point of view, the various specifics of disturbed pragmatic language level in people with Autism Spectrum Disorders (ASD). In the following part, mainly empirically, we will present the particular results of research examinations (Disturbed communication skill and the impact of its symptomatology on inter-disciplinary cooperation of professionals and the affected family in a complex intervention, n. Pdf_2012_012). Communication deficits in selected forms of disturbed communication skills focused on evaluating the partial determinants of verbal and non-verbal components of communication in special education practice, Faculty of Education at Palacký University (n. Pdf_2013_021, main investigator: Kateřina Vitásková), the partial results of which map, and render an analysis of, speech and language therapeutic intervention in people with ASD. Towards the end of the paper, we aim to acquaint the reader with a research focused on the global detection of pragmatics in people with ASD, considering the element of non-verbal communication (GAČR, Pragmatic language level in people with ASD, 14-31457S, 2014/2016, main investigator: Kateřina Vitásková).

Keywords: autism spectrum disorder, disturbed communication skills, pragmatic language level, speech-language intervention, non-verbal communication.

1. INTRODUCTION

In the current speech and language therapy (SLT), symptomatic speech disorders – which, in accordance with Lechta (2011), can be specified as interference in communication skills coexisting with primary and dominant diseases – are actual but also a much neglected topic (cf. Buntová & Tichá, 2009; Vitásková & Říhová, 2012a). The wide spectrum of symptoms implies deficits projected into impaired speech development in all of its components, whereas the extent of distortion is determined by a large number of varying factors (cf. Reisinger, Cornish, & Fombonne, 2011; Říhová, & Vitásková, 2012; Vitásková & Říhová, 2012b). The unifying aspects are generalized symptomatic categories or markers that also include the area of pragmatic language levels (PLL) (Vitásková & Říhová, 2013).

Pragmatics in communication is, according to Watzlawick, Bavelas & Jackson (2011), interpersonal interaction by means of which we initiate effects leading to adequate perception and behavioural reaction corresponding with the situational context. The authors also point out that they "...place lesser emphasis on traditional relationships "sender-sign and sign-recipient" but we tend to prefer the interpersonal relationship of "sender-recipient" mediated by the communication" (p. 25). Pragmatic language level thus represents the application of communication skills, mastering speech skills in every-day life and

materialization of the communication intention. Communication intention occurs earlier than spoken utterance and by means of this skill, a child can express his/her wish to play, his/her dissatisfaction or draw somebody's attention by crying (Bates, 1976) and it is then obvious that pragmatic language level is an essential precondition of social interaction and its disturbance is a fundamental factor inhibiting effective realization of the communication process.

2. BACKGROUND: PRAGMATIC LANGUAGE LEVEL IN PEOPLE WITH ASD

The deficits of this language level are the specific symptoms of distorted communication skills in people with ASD, which makes it a characteristic sign of the given problem (compare, e.g. Geldard & Geldard, 2008; Šedibová, 1998; Vosmik & Bělohávková, 2010). Pečeňák (as cited in Lechta, 2003) points out that in people with ASD with good verbal skills, we find significant disturbance in the pragmatic language level. Speech in such individuals lacks communication intention and thus, fails its primary function – exchange of information. Philips et al. (as cited in Vermeulen, 2006) outlines the results of a research examination aimed at comparing communication skills between 2-year old typical toddlers and 2-year old infants with autism spectrum disorder. The research outcomes show that toddlers with ASD have substantial deficits primarily in skills relating to asking for something, referring to an impulse or situation catching their attention, and also with problems in sharing and paying sufficient attention to the content of the communication. Pragmatic language level as a basal issue in communication skills in people with ASD is also discussed by Howlin (2005) who claims that, in her opinion, the fundamental problem of the majority of people with ASD does not lie in the fact which words they use, but in the fact how they use them. Mitchell et al. (2006) conducted a comparative retrospective study in children with ASD (N=97, dg. infancy autism) and their typical siblings by means of analysing home videos and dialogues with parents with the objective of analysing early communication and its deviations when compared with the typical sibling. The results of the given study show that before 1 year of age, the predominant symptom in a child with ASD is delayed development of speech; after 12 months of age certain problems in understanding communication and production of gesticulation were apparent and persisting absence of verbal production was apparent after 18 months of age. At the same time, specifics in non-verbal communication and lack of response when addressed were recorded. Miniscalco (2014) draws attention to deficit in imagination as one of the causes for disturbed pragmatic linguistic level in persons with ASD. He conducted a longitudinal study in 34 children with ASD and compared them to a group of typical children, concluding that the ability to imagine plays a key role in commanding conversation skills.

Social communication skills represent significant interactive ability in pre-school children. Building reciprocity in communication, within such contemporary group, determines their psychosocial development and predicts socialization in the wider meaning of the word (compare Chiat & Roy, 2013; Vitásková & Říhová, 2013; Vitásková & Říhová, 2014). This sphere was also examined by the investigation conducted by Gertner, Rice, & Hadley (as cited in Bishop & Leonard, 2001). They applied socio-metric study focusing on identification of characteristics of a child with whom other children at the pre-school would like to play and the characteristics of a child preferably avoided by other children. The results confirmed the fact that the significant predictors of popularity within the group of pre-school children were communication skills, primarily pragmatics and the area of

reception of nonverbal as well as verbal communication, the ability to detect and apply prosodic factors of speech, and to understand the fundamental elements of irony and double meaning (in *ibid.*).

PLL difficulties in people with ASD (especially with the Asperger's syndrome; AS) are of neurobiological basis (e.g. Tesink et al., 2009) as they show increased activity in the right frontal gyrus – Brodmann area 47 (mapped by means of fMR). In the course of processing emotionally saturated information, the area that was activated in people with ASD differently than in typical people was the cerebellum, the central part of limbic system and the temple cortical areas, whereas the left amygdala or the left part of the cerebellum did not show any stimulation in comparison to the typical population (Critchley et al., 2000).

Functionality and reactivity of the right hemisphere in persons with autistic spectrum disorder (ASD) is increasingly more monitored as deficits and atypism of the right hemisphere development is considered to be one of the main basis of certain autism features. Lazerev et al. (2009) in this respect point out the fact that right hemisphere deficits can be overlooked during a common examination of brain activity in persons with autism, as focus on verbal aspects of communication assessment are predominant. Deficit processing by the right hemisphere is also researched in persons with Asperger syndrome, in whom, unlike in the intact population, it is not at all used to perceive metaphors in understanding speech (Gold & Faust, 2010), although its inclusion in the process of understanding language stimuli should be activated simultaneously with left hemisphere processing, which in intact persons is predominant in function (Just et al, 2004, in *ibid.*).

An interesting study was conducting evaluating the occurrence of differences between highly functional autism (n=11), Asperger's syndrome (n=22) and speech and language disorder (SLD) (n=11) (Ramberg, Ehlers, Nydén, Johansson, & Gillberg, 1996). The partial objective of the study was to outline the differences in vocabulary, understanding and pragmatics. Particular results indicate that Asperger's syndrome has, in comparison to highly functional autism and SLD, significantly higher results for verbal IQ with concurrent homogenously detected deficits in the social aspects of communication. It follows that, given the possible absence of difficulties associated with phonetic-phonologic linguistic level and active vocabulary, pragmatics in communication in people with Asperger's syndrome shows significant specifics hindering social interaction.

The significance of differential diagnosis is apparent also in the distinction between Asperger's syndrome (AS) and the so-called highly functional autism (HFA). At present, these are highly debatable categories comprising of homogenous as well as completely diverse symptoms. One of the diagnostic markers is also the field of communication on which the research investigation conducted by Ghaziuddin & Gerstein (1996) was focused. These authors accentuate the fact that a specific and primarily characteristic feature of Asperger's syndrome is pedantically precise articulation, marked as a clinical feature. This claim is supported by the results of investigation pointing at the fact that 76% of the monitored set of persons with AS showed pedantically precise speech, unlike persons with HFA where the frequency of this symptom was 31% (*ibid.*).

As mentioned above, disturbed communication ability, pragmatic linguistic level in particular, is not only a typical symptom of ASD but also an important diagnostic and differential-diagnostic criterion. A number of researches were focused on analyzing deficits in this sphere, interfering with all diagnostic categories of ASD (infancy autism, Asperger's syndrome, atypic autism and others). As an example, we can name the study conducted by Rapin & Dunn (2003) and Tuchman and colleagues (as cited in Rapin & Dunn, 2003). The analysis of the research set consisting of 491 children (N=229 ASD, N=262 specific

language impairment, SLI) brings results referring to symptoms that can be noted as basal and typical for persons with ASD. Most commonly, verbal agnosia (compare Dostálová, 2014), deficit in phonological decoding, disorders of expression of communication (absence of verbal communication, verbal echolalia, automatisms, neologisms) (compare Boyd, 2011) and also aberration in non-verbal communication (compare Doherty-Sneddon, 2005). The issue of disturbed communication ability in persons with ASD is also incorporated in a number of successive research investigations conducted at the Faculty of Education in Olomouc. The following sections of the text present the partial results of an investigation focused on pragmatic linguistic level in persons with ASD.

3. RESEARCH DESIGN AND METHODOLOGY

The following part of the paper introduces the particular results of longitudinal research investigations conducted in time period March 2011– March 2014 at the Institute of Special Education Studies of the Faculty of Education at Palacky University in Olomouc.

3.1. Research objectives

In the presented paper, we focus on the following areas:

1. Mapping whether the addressed respondents (clinical speech and language therapists in the Czech Republic) provide their SLT intervention to clients with ASD.
2. Analysing the cognitive level of disturbed communication skill within speech and language therapists in the Czech Republic.
3. Providing reflexion on the conducted SLT intervention in people with ASD from the point of view of parents of children with ASD.

The principal research method is a questionnaire distributed to 3 groups of respondents – clinical speech and language therapists (May 2011, number of questionnaires distributed 408, returned and completed 144; 35.29%), parents of children with ASD (June 2011, number of questionnaires distributed 41, returned and completed 19; 46.34%) and speech and language therapists working in the area of school system and medical care (March 2013, number of questionnaires distributed 390, returned and completed 69 questionnaires; 17.69%). When compiling the questionnaire, we preferred the combination of structured and semi-structured items and we respected the principles necessary for its creation. We applied the Likert scale with 5 levels, ranging from absolute dissatisfaction to complete satisfaction.

3.2. Results analysis

Our first focus was on mapping whether speech and language therapists in the Czech Republic look after clients with ASD.

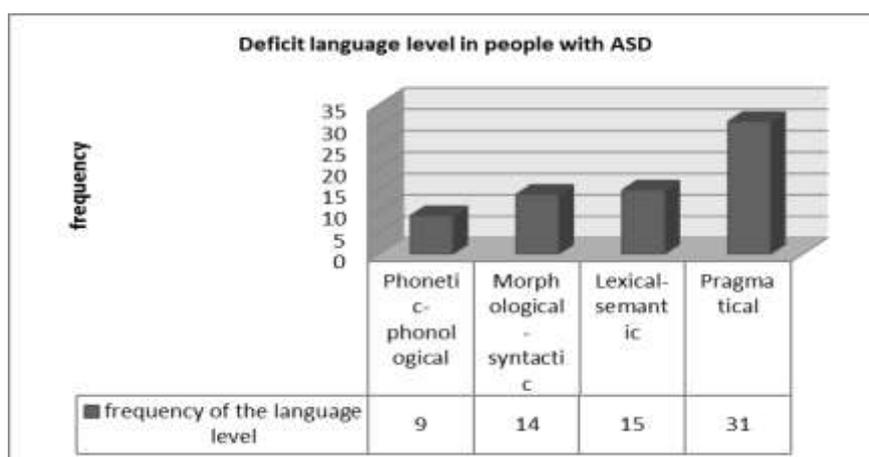
Table 1. Frequency of clientele with ASD under treatment of clinical speech and language therapist.

<i>Are there persons with ASD among your clients?</i>		
<i>Statement</i>	<i>frequency</i>	<i>Percentage frequency</i>
A. yes	80	55.56
B. no	64	44.44
Σ	144	100

It is quite apparent (see Table 1) that out of the total number of speech and language therapists participating in our examination (n=144), 80 respondents (55.56%) provide therapies to people with ASD. The average number of clients with this diagnosis per each professional who confirmed conducting SLT was 4 people with ASD; it is thus altogether approximately 320 individuals. Increase in the occurrence of ASD not only in the Czech Republic but also, for example, in the USA (compare e.g. Strunecká, 2009), which is identically claimed by Dudová, Beranová, and Hrdlička (2013) and the simultaneous necessity of conducting SLT for all clients with ASD lead to the fact that the given clients represent sufficiently quantitatively saturated and justified group of people where intervention targeted on development of functional communication skills should have momentous, irreplaceable and purposeful role.

The following items of the questionnaire mapped the cognition level concerning disturbed communication skills in people with ASD. Respondents were offered a semi-structured question consisting of 4 possible answers (phonetic-phonological language - PPLL level, morphologic-syntactic language level - MSLL, lexical-semantic language level - LSLL, pragmatic language level - PLL) where they should respond with adequate reply.

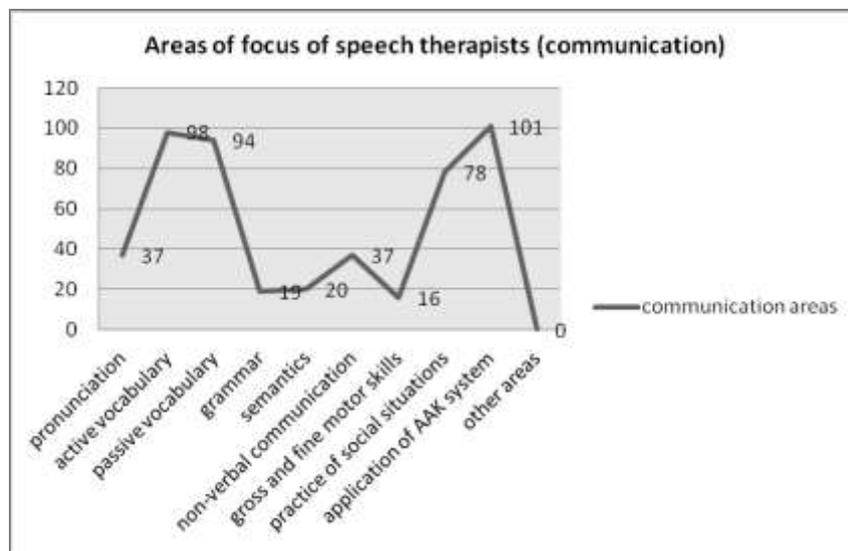
Figure 1. Deficit language level in people with ASD.



As it is obvious (see Figure 1), the addressed respondents mark as most frequent (n=31; 44.93%) deficits relating to PLL. The next most frequent is the LSL (n=15; 21.74%) and MSLL (n=14; 20.29%). Nine SLTs find the PPLL as deficient (13.04%). It results that the addressed professionals marked, as the dominant aberrant, disturbed adequate language level affecting the given communication area is being typical for people with ASD. At the same time, it should be, however, highlighted that qualitative indicator presented by the frequency lesser than half – 44.93% is not statistically sufficient.

The deficient linguistic level is directly related to the field of intentional focus of speech and language therapeutic intervention. A questionnaire was presented within the framework of a GAČR (Czech Science Foundation) project aimed at analysing the areas of focus of communication ability in persons with ASD as reflected by the addressed respondents (Czech speech and language therapists).

Figure 2. Areas of speech and language therapists' focus.



Most frequently (N=101, 20.20%), the addressed respondents stated that within their speech and language therapeutic intervention, they apply the elements of alternative and augmentative communication (AAK = engl. AAC). From Figure 2, it is also obvious that the second strongest attention is paid to active (N= 98, 19.60%) and passive (N=94, 19.60%) vocabulary. Practice of social situations is applied much less frequently, only by 78 speech therapists (15.60%). Intervention through pronunciation and non-verbal communication is frequent in the same extent. The results show that 37 respondents (7.40%) focus their therapeutic intervention on phonetic-phonologic linguistic level, and the same number of respondents concentrates on non-verbal communication. On the other side of the scale, we can see that the speech therapists devote least attention to the development of gross and fine motor skills (N=16, 3.20%), grammar (N=19, 3.80%) and semantics (N=20, 4.00%).

In the given context, it is important to mention the below-stated results associated with reflection on the provided SLT intervention from the point of view of parents with children with ASD.

Table 2. Content of SLT intervention from the point of view of parents with children with ASD.

Area	Frequency	Percentage frequency
A. pronunciation	12	75
B. understanding	7	43.75
C. vocabulary	8	50
D. grammar	1	6.21
E. motoric	6	37.5
F. pragmatics	4	25

We believe that the PPLL (see Table 2) is not relevant as a primary area of development of communication skills in people with ASD. However, analysis of the results of the questionnaire investigation conducted on parents of children with ASD shows that three quarters of the respondents addressed (75%) notice preference for this language level in the execution of SLT intervention. This result could be simply taken as a proof of SLT's inclination to rather mechanical, formal attitude to their therapy provided towards children with ASD (emphasizing only the surface component of language, without considering the functional, social aspects of communication ability). At the same time, we must be aware that the course of the intervention may be misevaluated by parents. We assume that they are not always able to recognize the real purpose of the SLT therapy appropriately, especially in case that the SLT does not inform parents about the therapeutic goal and its ground sufficiently.

4. FUTURE RESEARCH DIRECTIONS

The specific statements of speech and language therapists clearly indicate that the production of materials focused on diagnosing pragmatics in individuals with ASD is totally inadequate; their reflections point to the need for creating diagnostic and evaluation materials aimed at the pragmatic language level in people with ASD or adapt international tests to conditions in the Czech Republic. This should also be a partial outcome of the project GAČR (*Pragmatic language level in people with ASD*, 14-31457S, 2014/2016), which focuses on the creation and subsequent verification of the evaluation material directed at pragmatics in people with ASD. The project has the primary objective to detect, analyse and compare pragmatic linguistic level in persons with autistic spectrum disorder (ASD), which is the primarily disturbed area of their communication skills. The highest point of the research shall be the compilation of a specialized testing material evaluating the ability to apply communication in the social context, which will be verified in four heterogeneous groups of clients (persons with ASD, individuals with intellectual disability, children with developmental dysphasia and typical persons). The resulting comparison shall be deeper analysis of additional deficits in the pragmatic linguistic level and description of specific markers in selected groups of probands, which is essential for shifting the differential diagnosis of the disturbed communication ability in persons with ASD (compare with Volden & Phillips, 2010).

5. CONCLUSION AND DISCUSSION

The presented paper focuses on the essential topic ASD related disturbed communication skills and SLT intervention. The initial part dealt with disturbed communication skills in general and highlighted its pervasiveness in all individuals with ASDs diagnosis. The theoretical basis was accomplished by inland and foreign research examinations and their objective was to create a global view of the problematic condition at issue showing that the difficulties in the pragmatic language level are specific for ASD individuals. These variations are evident already in very early age and, to a significant extent, predict the child's social emotional development.

The empirical part of the paper offers particular results of longitudinal and follow-up studies conducted at the Institute of Special Education Studies at the Faculty of Education, Palacky University in Olomouc. These studies aimed at detecting whether speech and language therapists in the Czech Republic, within their professional practice, look after clients with ASD; in addition to rendering an analysis of content of the speech and language

therapy intervention in people with ASD and its reflection from the point of view of parents of ASD children. From the results of the mentioned studies, it follows that people with ASD are not registered sufficiently within speech and language therapy care (44.44% of the addressed respondents confirm treating clients with ASD). On the other hand, it needs to be mentioned that 90.28% speech and language therapists consider the execution of speech and language therapy intervention as necessary and important. Opponents of this belief accounted for only 8.33% of the responses.

With regard to the pragma-linguistic concept of speech and language therapy, PPL should be gaining ground – as pointed out by Lechta (2003), Grigorenko, Klin, & Volkmar (2003). This is also being confirmed by actual results verifying the effectiveness of speech and language therapy intervention in relation to the socio-pragmatic skills of children with ASD and typical children (Adams et al., 2012); the given situation is also acknowledged by ASHA in its classification of communication disorders (pragmatic communication disorders represent an independent subcategory) (American Speech-Language-Hearing Association, 1993). Moreover, for practitioners it is also necessary to understand the symptomatological continuity between newly defined social-pragmatic communication disorder (SPCD) and ASD (when in case of ASD the SPCD symptoms are more tied to the primary key socio-pragmatic deficit, while pure form is a “pure” form of communication disorders), SPCD and language disorders (such as specific language impairment - SLI, etc.) and SPCD and neurodevelopmental and other disorders (Norbury & Sparks, 2013). Subsequently, the content of the speech and language therapy intervention was investigated. In relation to the core problem of ASD (social deficit and disturbed communication affecting pragmatic language level) and with reference to the preference of the so-called pragma-linguistic concept in SLT, we found it essential that speech and language therapists prefer the development of the PLL. Practically, this includes, e.g., practising social skills, perception and expression of non-verbal communication, and applying and practicing alternative and augmentative communication. It follows from the results that 14.4% of speech and language therapists still perceive that the principal deficit is at the PPLL. On the other hand, 81.25 % SLTs prefer alternative and augmentative communication, which needs to be perceived as positive. However, the statements of parents of children with ASD that about 75% speech and language therapists still preferring the development of pronunciation cannot be regarded as optimal.

Regarding the results of our investigation, challenging is also an absence of relevant culturally-ecologically reliable assessment tools related to changes of the concept of differential diagnosis in the context of neurodevelopmental disorders and cultural differences as those affect the records influencing the prevalence rate of SLI and ASD and their diagnosis. Within the diagnostic process it is necessary to critically discuss the exclusion criteria, e.g., whether the disorder finally just not entirely meet the criteria of diagnosis of ASD or the definition of a previously defined type of pragmatic disorder of PPD type.

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ACKNOWLEDGEMENTS

The research was supported by following projects: “*Disturbed communication skill and the impact of its symptomatology on inter-disciplinary cooperation of professionals and the affected family in a complex intervention*” (n. Pdf_2012_012) and “*Communication deficits in selected forms of disturbed communication skills focused on evaluating the partial determinants of verbal and non-verbal components of communication in special education practice*”, Faculty of Education at Palacký University (n. Pdf_2013_021, main investigator Assoc. Prof. Kateřina Vitásková, Ph.D) and the project of the Czech Science Foundation (GAČR) (“*Pragmatic language level in people with ASD*”, 14-31457S, 2014/2016, investigator: Assoc. Prof. Kateřina Vitásková, Ph.D.).

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