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THE RELATIONS BETWEEN THE ELEMENTS OF A SENTENCE IN UTTERANCES OF AUTISTIC CHILDREN FORMULATED IN THE POLISH LANGUAGE

This paper discusses the problem of syntax skills in children with autism. The main research problem pertained to the course of development of syntax in children with autistic disorders. This study compared the syntactic competence of two autistic boys aged 8 years. The linguistic analysis of the testimonies revealed differences in the way sentences were constructed. Nevertheless, in the messages of both boys errors appeared indicating impaired communication competence. Thus, the goal of the research was an attempt to analyse children's utterances, taking into account the main types of utterances, their structure and grammatical correctness. The research aimed at finding and capturing other forms of expression, typical for children with autism. The syntax skills of children with autism are not very good. If children construct utterances, these are usually synthetically and grammatically poor sentences. Autistic children are unable to combine the two constituents of a sign into a single whole. In addition, they find it difficult to understand words that have a double meaning, namely literal and figurative. The children form short, incomplete, not very detailed utterances, meager in terms of content.

KEY WORDS: syntactic system of the Polish language, autism, language competence.

Introduction

Assimilation by a child of the syntax system of a language plays an extremely important role in the development of its cognitive and social activity. The shaping of the ability to use sentences is expressed by communicating feelings, wishes, as well as judgments and opinions to the environment. A child of several years of age spontaneously creates sentences and expressions which, depending on the structure, the number of components and the manner they are connected, variously reflect their inner experiences and mental activities (Przetacznikowa, Makiello-Jarza 1968: 383). The aim of this article is to present the development of syntactic skills in children with autism against the backdrop of the syntactic development of the Polish language in children without communication disorders. The theoretical aim of the paper is to investigate the ability to create utterances taking into

account the rules of syntax in children with autism, including an analysis of the composition of sentence components, the manners of combining them, and grammatical correctness.

The subject and aim of the study. The subject of the study presented in this paper is the description and comparison of the linguistic competence in children with autism of early school age in a detailed scope, i.e. the language system at syntactic level.

Research problems. The main problem question is: can autistic children combine words into combinations of words?

Research variables and their indicators. The independent variable in the research paper is the autism diagnosed in the studied children. The indicator is an opinion issued by the Psychological and Pedagogical Clinic, whereas the dependent variable is the level of linguistic syntactic competence. Its indicator is the analysis of empirical research results, obtained from a syntactic skills test.

Research tools. The utilised research technique is a set of tasks checking the mastery of syntax by children with autism. The other research technique selected for the purpose of data collection is document analysis. I used situational images as my own research tool.

The course of research and characteristics of the tested children. The research project was implemented at the Centre for Early Intervention (Ośrodek Wczesnej Interwencji) in Kielce. The research subjects were two boys¹ aged 8, attending the same class in primary school.

Review of research. Specification of the development of grammar in children with autism. Linguistic competence is the ability to understand and construct correct utterances in accordance with the rules of syntax of a given language. In the case of autistic children, it is difficult to talk about the stages of development of syntax. The main proof for this would be the fact that a vast majority of these children do not speak at all, and if they do use speech, it develops very slowly. Due to this, the literature regarding the topic has little information about the formation of utterances by children with autism.

Definition of autism. Autism pertains to the varied scope of difficulties and the level of functioning of the persons affected by it. It alludes to the Greek word *autos* (self). The term was introduced in 1943 by the prominent paediatrician Leo Kanner. He separated a group of children with specific behaviours defined as early childhood autism (Jaklewicz 1993, Młynarska 2008) from children with schizophrenia, psychoses and mental retardation. At present, autism is defined on the basis of the so-called autism triad of impairments, typical for this disorder. A characteristic trait of people with autism is their limited ability to make social contacts and interact with other people. We can also observe disorders in communication (verbal and non-verbal), excessively schematic behaviour and lack of activity and interests in people with autism. It is these symptoms that are apparent in a child's behaviour that form the basis for understanding of this term. Furthermore, autism is an overall developmental disorder, affecting all spheres of functioning of a child. It covers a number of disorders

¹ In this article, the boys are presented as Ch 1 and Ch 2.

that are similar in terms of behaviour. Irregularities appear in different spheres and they develop differently at different stages. Thus, there are several terms that refer to autism. As Ewa Pisula writes, one can distinguish: classical autism / Kanner Syndrome; early childhood autism; autistic traits/tendencies/behaviours; childhood autism; autistic disorders; atypical autism; high/low functioning person with autism (Pisula 2010). At present, autism is cited as one of several disorders known as the autism spectrum disorder (ASD) (Teitelbaum, Teitelbaum 2012).

Assessment of the level of the development of basic skills in terms of syntax in children with autism – linguistic analysis

One of the elements of syntax is the relations between words in a sentence. In Polish syntax, we can distinguish the relations of agreement, government and complement. In the below indicated task I wanted to check how these relations were realised by Ch 1 and Ch 2. For this purpose I used images that gave me the picture of whether the boys included correct grammatical forms in their utterances.

Prior to commencement with the actual tasks assessing their statements, I had always conducted an initial rehearsal, which had been aimed at familiarisation of the test subjects with the exercise. Below I present the methods of realisation of phrases in the utterances constructed by the boys.

1. Assessment of the implementation of agreement

In Polish, agreement is expressed in the concord between the subordinate and the superordinate word in terms of case, number and gender. This relation combines: a finite verb with a noun or a subjective pronoun, and an adjective, adjective pronoun, ordinal number with a noun as the superordinate word.

Table 1. Assessment of the implementation of agreement

<i>Assessment of the implementation of agreement</i>			
	Testing method	Ch 1's answers	Ch 2's answers
Task 1 (an image of a car)	<i>Take a close look and tell me what you see.</i>	<i>I see a red car.</i>	<i>an auto</i> After being asked an auxiliary question (<i>What is this car like?</i>), the boy said: <i>pretty</i> .
Task 2 (an image of a woman ironing clothes)	<i>Take a close look and tell me what you see.</i>	<i>A lady irons.</i>	<i>a lady</i> After being asked an auxiliary question (<i>What does the lady do?</i>), the boy said: <i>irons</i> .

Source: own elaboration.

On the basis of the first task it can be concluded that agreement is properly implemented by Ch 1, as evidenced by the boy's utterances. He described the image of the car in the following manner: *I see a red car*. The boy made a proper combination of an adjective with

a noun as the superordinate word. The illustration presenting a woman ironing clothes was also described in accordance with the rules of agreement by the boy: *A lady irons*. He used a finite verb with a noun.

However, Ch 2 could not form a sentence in terms of agreement on his own. The boy always provided a single word answer to the researcher's questions regarding what he saw in the images: *auto, lady*. Therefore, to get a more accurate answer, I asked additional questions: *What is the car like?, What does the lady do?*. Even though the boy answered correctly, it was the questions that guided him towards the correct answer. Hence the assumption that he is unable to form sentences in regards of agreement.

2. Assessment of the implementation of government

In a government relation, there is a different grammatical dependency of the subordinate word on the superordinate word. There is no agreement here, since the superordinate word requires the use of the subordinate word in a specific case.

Table 2. Assessment of the implementation of government

<i>Assessment of the implementation of government</i>			
	Testing method	Ch 1's answers	Ch 2's answers
Task 1 (an image of a teddy bear)	<i>Take a close look and tell me what you see.</i>	<i>This is Dawid's teddy bear. Bear pretty.</i>	<i>Wikuś. Teddy bear. Yes. Oh no.</i>
Task 2 (an image of a boy looking for a shoe)	<i>Take a close look and tell me what you see.</i>	<i>No shoe. (He's) Looking for a shoe.</i>	<i>The boy. Shoe. No.</i>

Source: own elaboration.

Ch 1's understanding of this relation can be described as good. The boy formed sentences using government rules correctly. He described the image of the teddy bear in the following manner: *This is Dawid's teddy bear. Bear pretty*. The boy combined a noun with a noun in an appropriate case. One can also notice the proper use of agreement. When describing the boy looking for a shoe, Dawid used the proper grammatical form: *No shoe. (He's) Looking for a shoe*. He used a verb and a noun, putting it in a specific case.

Ch 2, in turn, was unable to form a sentence with observance of the case government rules. His utterances, like in the previous exercise, rather took the form of single word sentences. Description of the images was as follows: *Wikuś. Teddy bear. Yes. Oh no. Boy. Shoe. No*. Therefore, it is difficult to conclude that the boy has mastered the rules related to this word relationship.

3. Assessment of the implementation of complement

In complement relations there is no dependency of the form of the subordinate element on the superordinate element. The subordinate element is a flectionless word in this case.

Adverbs, adverbial pronouns, adverbial gerunds with verbs, adjectives and adverbs, also nouns without a preposition or with a preposition, acting as adverbials appear as subordinate elements.

Table 3. Assessment of the implementation of complement

<i>Assessment of the implementation of complement</i>			
	Testing method	Ch 1's answers	Ch 2's answers
Task 1 (an image of a boy running)	<i>Take a close look and tell me what you see.</i>	<i>Boy runs.</i> After being asked an additional question (<i>How does he run?</i>) <i>D: fast.</i>	<i>The boy. Run. Fast.</i>
Task 2 (an image of a boy sitting)	<i>Take a close look and tell me what you see.</i>	<i>Boy sits</i> After being asked an additional question (<i>Where does he sit?</i>) <i>D: sits chair.</i>	<i>Sits. Chair</i>

Source: own elaboration.

When analysing Ch 1's utterance, one may conclude that the complement relationship turned out to be the most difficult task for the boy. He was unable to construct a correct sentence on his own, and after being asked a guiding question, the boy used improper grammatical forms. Ch 2, on the other hand, used enumerations in his utterance once again: *The boy. Run. Fast, Sits. Chair*. We perceive the improper implementation of this relation in a combination of the verb with an adverb and a prepositional phrase. It follows that both boys failed to properly form sentences in terms of complement.

4. Correction of sentences containing errors

The next task was to test the ability to perceive and correct improper grammatical constructions. Correcting improper structures is a skill that requires a fully developed linguistic awareness in children. I tested this skill on the basis of five types of errors. Each sentence contained a linguistic-grammatical (i.e. syntactical) error.

Table 4. Correction of sentences containing errors

<i>Correction of sentences containing errors</i>			
Error type	Testing method	Ch 1's answers	Ch 2's answers
Errors in terms of agreement	1. <i>Two</i> (masculine form of "two") girls watched a cartoon. 2. <i>This</i> (masculine form of "this") girl walked. <i>Did I say that right?</i>	1. <i>Two</i> (masculine form of "two") girls watched a cartoon. 2. <i>This</i> (neuter form of "this") girl walked.	No correction of the error

Errors in terms of government	1. At the zoo we saw an <i>elephant</i> (“elephant” in the nominative instead of accusative). 2. This is <i>Michał</i> (“Michał” in ablative instead of genitive) ball. <i>Did I say that right?</i>	1. At the zoo we saw an <i>elephant</i> . (correct form) 2. This is <i>Dawid’s</i> ball. (correct form)	No correction of the error
Errors in terms of complement	1. I am reading a <i>loud</i> book. (instead of “ <i>a book out loud</i> ”) 2. They went for a walk (“walk” in ablative instead of accusative). <i>Did I say that right?</i>	The boy was unable to correct the erroneous structures on his own. After additional questions he guessed.	No correction of the error
Structures improper in terms of word order	1. A bus goes down a street. 2. Shelf on there are books. <i>Did I say that right?</i>	No correction of erroneous structures	No correction of the error
Errors in the use of prepositions or prepositional phrases	1. A cat is sitting <i>in</i> a window sill. 2. Ala is playing <i>on</i> a ball. <i>“Did I say that right?”</i>	1. A cat is sitting <i>on</i> a window sill. 2. Ala is playing <i>with</i> a ball.	No correction of the error

Source: own elaboration.

We can see that Ch 1 corrected the sentences improperly in terms of agreement. After the researcher had asked if the proper form is *two (masculine form) girls* or *two (feminine form) girls*, the boy chose the improper one. He corrected the second sentence in the following manner: instead of *this (feminine form) girl walked* he decided that the proper form was *this (neuter form) girl walked*. We can see some inaccuracies in the understanding of this phrase because the boy in his previous task demonstrated the correct use of the grammatical form resulting from the agreement relation. One may conclude that he is still struggling with proper understanding of the dependencies in this phrase.

Ch 1 had no problem with correcting sentences in terms of government. He failed to recognise the errors on his own, but after further questions he was able to indicate the correct forms of the sentences, namely *At the zoo we saw an elephant (correct form)*, *This is Dawid’s ball, not Michał*. In the last sentence we can see that the boy used his own name; however, he did use the correct case form. On the other hand, errors pertaining to complement proved to be difficult for the boy. He was unable to correct the error on his own, and when he was asked: *Is it correct to say “I am reading a loud book” or “I am reading a book out loud”?*, he guessed. There was a similar situation with the sentence: *They went for a walk (walk in ablative instead of accusative)*.

The mistakes of using prepositions and prepositional phrases were properly corrected by the boy. It can be concluded that the reason for this is the fact that such forms are commonly

used in spontaneous speech. Definitely the most difficult thing was structures of sentences incorrect in terms of word order, the source of which is the inflectional nature of the Polish language. Since in our language almost all parts of speech are declinable, the correctness of sentences is determined by the appropriate declination of words, not the word order.

The ability to notice and correct grammatical errors is not well developed in both of the examined boys. Neither of them could independently recognise and indicate false expressions. To the examiner's questions they always gave answers that the sentence is correct: *Did I say that right?, Yes!*. Therefore, we can observe that language awareness is poorly developed in the boys. Admittedly, Ch 1 did not correctly recognise any sentence with incorrect grammatical structure, yet he made an attempt to correct the mistakes. On the other hand, Ch 2 did not make any attempt to correct the wrong sentence structures. Therefore, it can be concluded that language awareness is not developed in the boy at all.

We can notice enormous difference in the boys' ability to correct syntactic errors. Ch 1 showed better skills, which is a proof of better development of language awareness in terms of syntactic structures.

Conclusions

The analysis of the obtained results of empirical studies allows us to provide an answer to the assumed research questions.

When assessing the level of the boys' statements, a clear difference in the development of linguistic skills is noticeable. Ch 1 is on definitely higher linguistic level than Ch 2, which is a proof of better development of syntactic competence.

Ch 1 puts words together in word combinations, which means that he uses longer sentences while speaking, whereas Ch 2 finds this ability extremely difficult. Holophrases and elliptical sentences occur in the statements of Ch 1, yet in a relatively low quantity. He mostly creates extended simple sentences, although his statements are also characterised by complex sentences, mainly those of coordinate relation towards one another. On the other hand, there are few subordinate clauses. Ch 1 constructs multi-clause sentences, especially in situations triggering particular interest in the topic of the conversation and being the result of previous experiences. In the case of Ch 2, speech remains at the level of single-word sentences. His utterances involve enumeration of particular objects, naming simple activities and occurrences using a single word. However, one may conclude that speech is limited to two-word sentences, because in the boy's utterances there sometimes appear two-element sentences.

Ch 1 mainly forms sentences expanded with an object. In his utterances there are very few parts of the sentence such as an attributive or an adverbial. The sentences are dominated mainly by nouns and verbs, and adjectives appear very rarely; the same goes for numerals and pronouns. The most numerous group among indicators of conjunction are paratactics (coordinates), mainly *i (and)*. Ch 2 forms single-word sentences, constituting of the subject or the verb alone. Sometimes in the structure of the utterance appears a sentence containing both a subject and a verb. However, such structures are few and far between.

The sentences formed by Ch 1 are relatively correct in grammatical terms. Nevertheless, their structure is characterised by a significant level of linguistic errors. It is especially apparent in compound and multi-clause sentences rather than simple sentences. These utterances are characterised by incorrect clause conjunctions, disrupted word order and semantic structure. Sometimes, one can observe proper implementation of phrases and inflectional suffixes in his utterances; however improper grammatical forms occur quite often. Numerous agrammatisms are most probably the result of no contextual understanding. In the case of Ch 2, it is difficult to draw conclusions regarding grammatical correctness, because the boy does not form complex syntactic structures. One may only assume that he finds it difficult to properly implement phrases and to use proper grammatical forms.

Both boys indicate a low level of competence in terms of inclusion of a logical and semantical structure in an utterance. The boys do not use personal pronouns in their utterances. Their speech is characterised by repetition of the utterances of the other person. They repeat what they hear without proper modification. They do not correct themselves when they misuse a word because their syntactic competence is not developed enough for the boys to notice a mistake. Structures typical for children with autism appear. These are mainly direct and deferred echolalias. It was observed that the boys repeat phrases such as: *zachowaj spokój* (remain calm), *cichutko* (quiet), *nie wolno biegać* (no running), *wyjście ewakuacyjne* (emergency exit).

To sum up, it should be stated that the development of the sentence structure depends mainly on the language development of a given child. The syntax skills of children with autism are not very good. If children construct utterances, these are usually synthetically and grammatically poor sentences. Autistic children are unable to combine the two constituents of a sign into a single whole. They find it difficult to understand words that have a double meaning, i.e. literal and figurative. The children form short, incomplete, not very detailed utterances, meager in terms of content. These are minimal utterances. Single-word utterances may serve as an example, that is the same predicates, usually being answers to the questions asked, but also serving the purpose of request, information or advice. In children with significant developmental disorders there are no general principles regarding the formation of compound sentences. Their lingual messages are simple and short. There are no or very few deictic words, i.e. words indicating place or time (*yesterday, then, here, there, now*). It is possible only following the rules of echolalia (Kominek 2013). In case of compound or more syntactically complex utterances, one can observe quite a typical decrease in the tempo of speech and a monotonous timbre in children with autism. It is also apparent that they show no care for the way they are perceived by other persons. These children have problems in understanding the scheme and meaning of declension or conjugation. Problems with understanding diminutives also occur (Gałkowski, Jastrzębowska 1999). In the utterances formed by children with autism one can observe a lack of those parts of speech that describe the properties of objects and phenomena. These children have great difficulties with grasping spatio-temporal relations (Minczakiewicz 1994). They associate words with

specific items, objects. This makes it hard for them to understand and utilise polysemic words, as well as to use pronouns properly. Numerous studies indicate that children use the third person singular or their own names when they talk about themselves, rarely using the pronoun *I*. They also often shift pronouns to the end of a sentence (Pisula 1993).

One should remember that children who learn to form phrases and sentences still have a limited vocabulary and they are unable to distinguish syntactic forms. Frequent use of echolalia and phrases far beyond the scope of words understood by the child may result in an exaggerated assessment of their active speech (Schopler 1995).

In reality, it is not easy to pinpoint the moment when autistic children start to form more or less correct sentences and understand the utterances of others. Numerous observations show that understanding of speech is a higher level skill than verbal expression in children with autism.

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Annex

Syntactic skills test

Annex 1

Part I

Assessment of primary skills in terms of syntax

Task 1: Construction of sentences using phrases

The researcher prepares images (*appendix 1: the series "From Image to Word"*) showing:

- a ball, a car, a woman ironing clothes (agreement);
- a girl reading a book, a teddy bear, a boy looking for his shoe (government);
- a boy running, a boy sitting on a chair, a girl eating (complement)

1. Agreement**Initial rehearsal:**

The researcher puts an image of a ball in front of the child. Then he asks the child a question:

Question 1: *Take a close look and tell me what you see.*

If the child does not answer, auxiliary questions may be asked: *What is the ball like?*

After this exercise, the researcher moves on to the proper tasks, following the same scheme.

Task 1:

The researcher puts an image of a car in front of the child.

Task 2:

The researcher puts an image of a woman ironing clothes in front of the child.

2. Government**Initial rehearsal:**

The researcher puts an image of a girl reading a book in front of the child. Then he asks the child a question:

Question 1: *Take a close look and tell me what you see.*

If the child does not answer, auxiliary questions may be asked: *What is she reading?*

After this exercise, the researcher moves on to the proper tasks, following the same scheme.

Task 1:

The researcher puts an image of a teddy bear in front of the child.

Task 2:

The researcher puts an image of a boy looking for his shoe in front of the child.

3. Complement**Initial rehearsal:**

The researcher puts an image of a running boy in front of the child. Then he asks the child a question:

Question 1: *Take a close look and tell me what you see.*

If the child does not answer, auxiliary questions may be asked: *How is he running?*

After this exercise, the researcher moves on to the proper tasks, following the same scheme.

Task 1:

The researcher puts an image of a sitting boy in front of the child.

Task 2:

The researcher puts an image of a girl eating in front of the child.

Task 2: Correction of sentences containing errors

Try to correct me if I say something wrong.

1. Error in terms of agreement**Initial rehearsal:**

The researcher says: *Green (feminine form instead of masculine) car goes down the street. Did I say that right?*

– If the child states that the utterance is incorrect, then the researcher says: *You're right. It's incorrect to say: Green (feminine form instead of masculine) car goes down the street. You should say...*

– If the child gives an incorrect answer or is unable to answer, then the researcher asks: *Do you say green (feminine form) or green (masculine form) car?.*

– If there is no answer, the researcher says: *You say green (masculine form) car.*

After this exercise, the researcher moves on to the proper tasks, following the same scheme.

Proper tasks:

1. *Two* (masculine form of “two”) girls watched a cartoon.
2. *This* (masculine form of “this”) girl walked.

2. Error in terms of government

After the initial rehearsal, the researcher moves on to the proper tasks.

Proper tasks:

1. At the zoo we saw an *elephant* (“elephant” in the nominative instead of genitive).
2. This is *Michał* (“Michał” in ablative instead of genitive) ball.

3. Error in terms of complement

After the initial rehearsal, the researcher moves on to the proper tasks.

Proper tasks:

1. I am reading a *famous* (“famous” in masculine instead of feminine form) book.
2. They went for a walk (“walk” in ablative instead of accusative).

4. Structures improper in terms of word order

After the initial rehearsal, the researcher moves on to the proper tasks.

Proper tasks:

1. A bus goes down a street.
2. Shelf on there are books.

5. Errors in the use of prepositions or prepositional phrases

After the initial rehearsal, the researcher moves on to the proper tasks.

Proper tasks:

1. A cat is sitting *in* a window sill.
2. Ala plays *on* a ball.

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