

## Morphosyntactic Peculiarities of The Speech of Children with Down's Syndrome

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**Abstract:** The article, "morphosyntactic peculiarities of the speech of children with Down's syndrome", treats, important aspects of the study of two adjacent branches of linguistics, namely, psycholinguistics and neurolinguistics-Language development of the child accompanied by speech disorders, on the other hand, those morphosyntactic features that are specific to the Georgian language system, also appearing at the initial stage of the child's speech. Since communication disorders cover a wide spectrum, only children with Down's syndrome were selected for the study, because the genetic factor causing their speech disorder, unlike other disorders, is clearly known, and the systemic features of speech are defined in such a way that the results can be generalized, unlike other types of speech disorders, which have a more specific character. The research is related to the speech development of Georgian children with Down's syndrome, and the purpose of the research is to reveal the main patterns of the morphosyntactic features that are observable in the speech of children with Down's syndrome. Based on the specifics of the disorders, 9- and 10-years old children were selected for this research. Psychological observations have shown that the speech of a 10-year-old child with Down's syndrome corresponds to the speech of a child without a disorder, approximately 4-5 years old, the period when conscious speech begins. The main method of studying psychology is Observation. The most favorable material for studying a child's behaviour is given when it occurs in natural conditions. Thus, we will conduct the experiment in direct field conditions by using the "natural experiment" method. This way, can avoid us the bias of answers.

I conducted research, with questionnaires and game-like interactive experimental tasks. I use the method used by Piaget called the "*clinical method*" (Piaget 1994). Questions and experimental tasks are designed to stimulate childrens responses in a direction that is in with the scope of my interest. The result of the research showed the morphosyntactic features characterising the speech of children with Down's syndrome. In particular, their speech is characterized by:

- *Very short sentences. As a rule, they perceive more than they express;*
- *The development of speech is directly related to the development of fine motor skills of the hand;*
- *their speech is characterized by focusing on one specific moment;*
- *As a result of the research, the advantage of their visual memory was confirmed;*
- *The phenomenon observed during the production of the past tense forms of the verb was hyperregulation;*
- *They have a problem with understanding time and space in general;*
- *The stages of their speech development correspond to the stages of cognitive development, of those children without impairment;*
- *Through experiments, it was determined that all children with Down's syndrome made typical mistakes.*

This fact will help psychologists and language therapists working with them to develop certain strategies, which will be focused on improving children's speech, and this, in turn, will help to improve their socialization.

**Keywords:** Psycholinguistics, Neurolinguistics, language disorders, Morphosyntactic features, Child's speech.

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## Introduction

Learning language is thought to be a congenital ability to make abstract grammar structures and rules, which is grasped step by step. As far as learning language is a congenital process, it denotes actualizing the knowledge. Consequently, language development in a child is defined from "inside". Speech is not only a tool to master a language and communicate but it also defines child's psychic development. During the process of discovering life, nature or things around them, child's intelligence expands and progresses. Speech develops and the aesthetic approach to reality is formed. A language is the first system which determines his/her social life.

We got interested in two contiguous fields of linguistics, they are very imperative aspects of psycholinguistics and neurolinguistics, on the one hand, language development of a child and its subsequent process, speech disorder and on the other hand, the morphosyntactic peculiarities, characteristic to Georgian language system. This phenomenon becomes noticeable at the very first stage of speech. In the process of observing such facts, speech disorders were detected with children who have speech impediments. As the latter has a wide spectrum, for the research we selected the children with down syndrome, because the precipitating because of their speech impediment is a Genetic factor, unlike other disorders and its speech idiosyncrasies are clear, speech peculiarities are manifested in the way which allows to take a broad view on the subject.

In each case the syndrome is revealed in a different way. Working with down syndrome children requires special approaches and strategies. Despite the fact that each of them has dissimilar abilities and skills, their speech development process can be characterized with analogies. Analyzing these points, the research theme has become defined – speech development in Georgian Down Syndrome children and research target has become apparent - indicators of main models of morphosyntactic idiosyncrasies and their manifestation in the speech of Down Syndrome children.

Generally, the best method to define the way how a child's psychic development processes are progressing, is observation. Material based on the study of behavior should be collected in the natural conditions. The experiment consequently was held in the field setting, communicating directly with research participants using the method of "**natural experiment**". That way we avoided foreknowledge of answers, which often occurs in the artificial environment and hinders collecting individual and naturally actualized material.

The research was done on the basis of specially composed questionnaire and interactive experimental tasks

related to the research topic. We used the method which was called “**clinical method**” by Jean Piaget. During the learning process we asked questions to the informants, who articulated certain sentences or phrases. The questions and experiment tasks were compiled in the way which stimulated children’s answers to the direction we were interested in.

During the research we also used the method of structured interview which considers making special questionnaires based on the research topic, it is a good method not only to save time but to match and compare, organize – arrange and interpret, also to analyze the received answers.

The methods we used in the research are in compliance with acknowledged criteria, validity and credibility. To prove the credibility of the results, the research outcome was ascertained later. To meet the criterion of validity, its internal and external validity was protected. We observed whether the factors different from our hypothesis, affected the speech of our participants and to what degree it is probable to generalize the research outcomes.

In order to comply with acknowledged social values, on the basis of generalization the statistical analysis of children’s answers, the criterion by Piaget’s recommendations were considered. (Piaget, ... Cook, M.T. The origins of intelligence in children 1952).

*Surveying the similar age children;*

*Surveying the children who had similar level of development and disorder;*

*To prove the achieved outcome after a certain period had passed;*

The age group was formed of 8 children who were 9-10-year-old. Why all of the same age and not preschool children?! as speech development does occur in preschool time. As our research issue refers to children with peculiarities, this very age group was chosen. In the school period speech, verbal development is a continuous process, at the same time, mastering the reading and writing skills also contribute the progress in this direction. Down syndrome is followed by intelligence and adaptive personality disorders which affects their performance in the learning and communication processes. Correction/adjustment of these factors starts in the early childhood and In primary school time, 3rd - 4th classes is the right time, as they unlike their peers, learn to adopt these skills not earlier than this age. They learn much slower in comparison with other children. Their speech ability trails behind their mental development. Their verbal progress goes through the same phases, as their peers but much slower. Psychological observation showed that 10-year-old down syndrome child speech corresponds with a 4-5-year-old, with no disorders. In other words, according to mental development, physical age is halved. This is why 9-10-year-old children were selected and not preschool pupils. This is the age when the research can be the most effective to find out about their grammar peculiarities.

To achieve the relevant results, severe forms of mental delay were excluded from the experiment as well as light forms or mosaicism cases. Adolescents with trisomy and translocation also took part in the research, because these kinds of disorders are not different with its external forms and have similar indicators/signs. The children chosen, were of the same nationality to avoid different parental language codes. The native language, in our case

Georgian, should have been the same to accomplish the target of the research. Among many problems, down syndrome children have, the hardest is speech impediment. When working with them we should remember to differ two types from each other.

The first: hearing problem. Very often down syndrome sickness is followed by different level of disorder. As a consequence, arise hearing, speech development and articulation problems.

The second: when there is no problem with hearing.

When speech development disorder is connected with hearing problem or with central nervous system disorder, we are incapable to solve the problem by linguistic approach and medical intervention is inevitable.

As for the second variant with speech disorder, it is a problem but resolvable. This is a severe psychological problem, connected with peculiarities of physical and mental development. None of our participants has a hearing problem.

L. Vigotsky considers that hearing problem has a structural system. It can be primary or secondary. Primary is connected with biological factors of anomalous development. Genetic disorders also belong to it. As for secondary, it is caused by anomalous development of the primary dysfunction. Speech disorder in down syndrome people in our experiment is partially connected with genetic dysfunction, particularly with disorder of central nervous system, which is not proved yet, though modern studies showed that in the given case the surface of the right and left temples are symmetric, while within the normal range, it should be asymmetric. As we have already mentioned above, although the speech impediment is partly connected with genetic disorder, it is proved, that early response – rehabilitation can be successful. Our target is analogous: with the help of description the speech impediment peculiarities and identifying specific problems, we make a little contribution and help specialists who work with down syndrome children, to improve patients' speaking capacity and develop their intellect.

Speech impediment spectrum is quite diverse, the origin and the character of each case is different, however in every one of them, the communication with environment is incomplete. Generally, there are three types of disorder:

Expressive language disorder

Receptive language disorder

Mixed disorder

In case of Expressive language disorder, we come across difficulty in expressing opinions and feelings. Disorder like this is mostly revealed when the vocabulary is poor, which later causes using short sentences while speaking, making incorrect sentence structure, also morphosyntactic grammar mistakes: omitting pronouns and prepositions, incorrect verb or noun case and conjugation forms. The process is often followed by articulation

problems.

As for receptive speech order, the problem is to perceive and understand the speech of others. People with such disorders do not respond to others' speech not because they cannot understand but, they have receptive speech disorder. Such kind of impediment mostly is followed by expressive speech order. That is logical, as hearing a word and understanding it is the precondition of speech.

In case of mixed disorder, both types of problems are present at the same time.

With Down syndrome children's speech, two types of disorders are detected simultaneously. In other words, mixed type of disorder is manifested typically in them. What is the reason?!

Down syndrome children have speech which is hardly intelligible, because of muscular dystrophy. Unintelligible speech may have different reasons. They are:

Difficult sounds to articulate;

Low tone of face muscles;

Phonological problems (e.g. omission of ending sounds);

As we have already noted, right development of speech is obstructed by hearing and articulation problems, caused by anatomic-physiological peculiarities related to Down syndrome (hypotonia, decreased muscle tone, high palate mouth, difficulty in breathing). Visual memory is their strong side. In a very short time they can remember large amount of information, but they have "imagery" memory and not photographic (so called Eidetic memory).

How the disorder is assessed?

There are several means, they are:

Interview;

Observation;

Standardized tests to examine speech;

For speech impediment assessment the following five language aspects are recommended. They are:

Phonology;

Morphology;

Syntax;

Semantics;

Pragmatics;

Morphology – using prefixes and suffixes. Number of nouns, verb tense conjugation, formation and usage of proper nouns in a speech. To recognize the speech delay, children are asked to end the sentence.

Syntax involves understanding grammar constructions and structures. Perceptive syntax Assessment comprises picture selection. Among the read texts, the participants of the experiment should choose the relevant picture. Expressive syntax means an ability to pronounce grammatically correct sentence. Generally, it is examined through repeating sentences correctly but as repetition does not mean forming structurally correct sentence, more sensible way is to observe child's speech in the natural environment and gather spontaneously articulated phrases.

Semantics - difficulties in this direction are revealed in the poor vocabulary a child has. He has a dilemma to understand the different meanings of words and to recollect them. Such kind of observations are based on the tests composed according to dictionaries. Also, the tests centered on the word explanations, analogues and working out relations between words.

Pragmatics means language usage in the social context. Troubles arise in the social context, in the concrete situation, when gestures and language are required. Mainly it happens during story telling or during situational dialogues. Language usage is different for every individual, according to his pragmatic skills.

Many year research and studies confirmed that down syndrome children adopt language levels differently. They can study quite a large number of words and use them in interactive – social situations. It can be said that semantics and pragmatics are their comparatively strong side. Less developed is morphosyntax. Many disorders and difficulties are met namely in this filed. Especially forming grammar tenses, using prefixes and suffixes. Short sentences they practice, does not convey reality. As usual they perceive much more than they express.

We tried to hold pilot or feasibility research and find out the problems in speech and grammar usage, common in Georgian Down syndrome children.

We considered Piaget's third recommendation to confirm/prove the same result/outcome after a period of time and between main experiments was inserted an additional task, they should have told their favorite animation. This task apart from relaxation and attention distraction allowed us to receive more material and deduce what kind of morphosyntactic mistakes they make during a long talk.

Through the first task expressive syntax knowledge has been checked. They were given 9 pictures with relevant 9 sentences. Sentences were in different tenses and they had to match to what they hear, In order to simplify the task, moving picture were given. (so called GIF).

Samples of experimental tasks:

*A child is going to the kindergarten;*



*A girl is dancing;*



*It is raining;*



*The train will arrive in 2 minutes;*



*He will eat a cake;*



*He will play football;*



*A cup has been broken;*



*Grandmother knitted a cap;*



*She cut his hair;*



After selecting a picture, he should repeat the sentences, which examines the peculiarities of his perceptive syntax. At first the verbs are given in consecutively: 3 in the past tenses, 3 in the present and 3 in the future tenses. After some time, they are given the same pictures, at this time not in a consecutive order but in a jumbled way. Again 3 in the past, 3 in the present and 3 in the future tenses.

Second experiment task involves the following, to use a tense correctly in the already formed sentences. In order to receive the answers, we need, we resort to popular provocative method of getting records. It means we give the participants already arranged sentences, to ease the given task the sentences had time adverbs and they only had to put them in a relevant form.

*Yesterday, I was at school or I will go?*

*The day after tomorrow I am going to the kindergarten or I was there?*

*Tomorrow, I went to the cinema or I will go?*

*Today I painted a picture or I will paint a picture?*

*Last year I was seven years old or I am now?*

*Next year I was 8 years old or I will be?*

From the point of perceptive syntax, in order to receive more convincible material, we considered that making a matching between pictures and sentences, was not enough and added third experimental task. To make it natural, we created the stimulating environment for speech. During the experiment we asked additional indicative questions. E.g., What would you do in the place of a protagonist, what would you do? When others were answering, they also spontaneously desired to participate in the conversation.

The fourth experimental task was to use grammatical tense forms correctly by the participants. During a long talk they were talking about their favorite film or about their impressions. What were you doing yesterday? Where are you going at the weekend? With this kind of approach, it is possible to observe how successfully they deal with the challenge.

After the research the morphosyntactic peculiarities characterized to down syndrome children speech, became clear.

The children dealt with the first experimental task successfully, but they could not convey the information the pictures had and the things or events were described nominally.

Material received from the second experimental task, turned out to be interesting in the sense of usage certain tense forms. In particular, with past tense adverbial forms, they use present tense forms, instead of expected past verbal forms. The same took place concerning present and future tense forms. In the cases when future tense adverb required the verb in the future tense form, the participants, at any rate used the present tense forms. So they were focused on the time period when the experiment task has been taking place and could not generalize. When we asked them “please, say what do you see?” Their answer was merely in the present tense, although the action in the picture had already been completed. But when the question was put in another way, -what did you see? – They were able to use the relevant past tense form. The same occurred at the usage of future tense. Instead of paying attention to the future action, happening in the picture, again their answer was in the present. As for the question put in the future, tell me please, what the girl will do? They managed to form the verb in the relevant tense and use it.

The fourth task was aimed at distraction or relaxation of the children. We asked them to tell us a story or a fairy tale, some history or an animation, familiar for them. It turned out the most interesting and entertaining and they could handle the task successfully. However strange was that they confused several animations and fairy tale characters. E.g., While talking about *Cinderella*, at the end of the story, *Spiderman* appeared. The fact can be explained by imitation each other. Also, it can be determined by the fact that it was very hard for them to focus on one fact, one event and they were incapable to tell a story in a consecutive way.

The fifth task involved to draw a picture – a child is going to the kindergarten and then to describe it. It was also very enjoyable for them and very informative for us. One and the same picture has been described absolutely differently by each of them, though the description was short, broken into fragments and without ending...

After Observing and analyzing the results received from the experiment tasks performed by Down syndrome children, the outcomes can be generalized and formed in the following conclusion:

- *Down syndrome children make short sentences. Usually, they perceive more and express less. They almost accurately drew the picture which they had seen before. The colors were the same, the environment also, the road and the flowers. Quite the contrary happened when they were asked what was in the picture. The answer was minimalist: “a child is going” ... any other impressions were expressed in one or two words.*
- *Speech progress is closely related to the small hand motor development. Among experiment participants who could hold a pencil, sharpen it, color the drawing, cut paper or stick it, these had a better developed speech than those, with less developed motor functions.*
- *Their speech can be characterized with a focus on just one specific moment.*

- *Generally cognitive development of a person has a before surgery phase, which embraces period from 2-7 years, in our experiment it is 9-10 age period. This very phase mostly depends on visualization, not on the rules or concept. At this age thinking process is connected with concentration, reflected on the speech. Down syndrome children mainly made mistakes in using past and future tense forms. They comprehended what was clear, evident and obvious analogies were easily understood. They have difficulties to perceive and understand structures associated with space and time in sequence, using the experience in different situations.*
- *The research proved that they have the visual memory advantage. When they were given experimental handouts, a lot of mistakes were spotted concerning grammar tense usage. But after seeing pictures or watching videos, the result was dramatically different, eight participants' description was grammatically correct, they used the tense forms without any mistakes.*
- *Something interesting was detected when they had to conjugate past forms of a verb, it was hyper regulation, particularly two of them (with some exceptions) could not conjugate ergative verb case.*
- *They have a problem in understanding time and space categories, which is the reason they cannot form the verbs in different tenses.*
- *Receptive speech disorder is not detected, it means they understand negative and question forms.*
- *Their strong side, having substantial vocabulary, was demonstrated during long talk when they were describing a picture and main focus was made on expressing their own emotions and feelings, what they were thinking and what they would do in different situations.*
- *Their speech development phases (levels) correspond to their cognitive development stages, like children without any disorders.*
- *Research results basically prove the existence of problems generally acknowledged with down syndrome patients and also specific difficulties characteristic to Georgian language grammar system.*
- *The experiment showed that every Down syndrome child made typical mistakes. This fact will help the psychologists and language therapists to work out certain strategy oriented on the improvement of children's speech development. It will contribute their socializing process.*

School assists Down syndrome children to develop their intelligence abilities, relationships with their peers help them to socialize, which later benefits their speech development. The studies proved that Down syndrome children gain comprehensive education when they study together with healthy children and speech progress is achieved in the environment where they feel equal to others.

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