

A Review on Echolalia in Childhood Autism

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Abstract – Childhood autism is the syndrome that is characterized by permanent abnormalities in reciprocal social interaction, communication, and stereotypic behavior expressed by repetitive actions, movements or speech. Repetitive behaviors in language are represented by echolalia, which is divided into two categories, immediate or delayed. The purpose of this review article is to give a comprehensive view on the phenomenon of echolalia, its types and functions on the basis of investigations conducted by a number of foreign scientists. The author aspires to provide data in favor of the idea that echolalia is not just a meaningless repetition of other people’s words or phrases but it is an important means of communication of autistic children.

Keywords – echolalia, childhood autism, impairments, developmental disorder, communication, repetitive behavior

I. INTRODUCTION

In 1943, Leo Kanner [1], an Austrian-American child psychiatrist, described the behavior of 11 autistic children in his paper “Autistic Disturbances of Affective Contact”. He made a conclusion about the existence of a special clinical syndrome with a typical developmental delay calling it an “early infantile autism” [1]. Dr. Kanner has not only described the syndrome, but has also defined its peculiar features. He underlined that “the outstanding, “pathognomonic” fundamental disorder is the children’s inability to relate themselves in the ordinary way to people and situations from the beginning of life. Their parents referred to them as having always been “self-sufficient”; “like in a shell”; “happiest when left alone”; “acting as if people weren’t there”; “perfectly oblivious to everything about him”; “giving the impression of silent wisdom”; “failing to develop the usual amount of social awareness”; “acting almost as if hypnotized”[1].

According to the current International Classification of Diseases (ICD-10) [2], childhood autism is “a pervasive developmental disorder defined by the presence of abnormal and/or impaired development that is manifest before the age of 3 years, and by the characteristic type of abnormal functioning in all three areas of social interaction, communication, and restricted, repetitive behavior...”[2].

A special attention in ICD-10 is drawn to “qualitative impairments in communications” [2]. It is underlined that “these take the form of a lack of social usage of whatever language skills are present; impairment in make-believe and social imitative play; poor synchrony and lack of reciprocity in conversational interchange; poor flexibility in language expression and a relative lack of creativity and fantasy in thought processes; lack of emotional response to other people’s verbal and nonverbal overtures; impaired use of variations in

cadence or emphasis to reflect communicative modulation; and a similar lack of accompanying gesture to provide emphasis or aid meaning in spoken communication.” [2].

Thus, it becomes clear that impairments in language and social communication are the primary diagnostic criteria for childhood autism. A number of investigations dedicated to revealing language peculiarities typical of childhood autism outline that one of the most prominent features among autistic children is *echolalia*. These children tend to repeat ready-made phrases without constructing their own sentences, have problems with maintaining the dialogue, substituting personal pronouns, using prepositional phrases, in other words, they have problems with producing their own creative language.

The purpose of this review article is to give a comprehensive view on the phenomenon of echolalia, its types and functions on the basis of investigations conducted by a number of foreign scientists. The author aspires to provide data in favor of the idea that echolalia is not just a meaningless repetition of other people’s words or phrases but it is an important means of communication of autistic children.

II. ECHOLALIA. TYPES OF ECHOLALIA

Echolalia is considered to be one of the most distinctive symptoms of childhood autism. It is usually defined as the involuntary repetition of sounds, words or phrases produced by another person. There are two general types of this phenomenon: immediate and delayed echolalia. *Immediate* echolalia refers to repeated utterances that are produced either following immediately or soon after a model utterance was produced. *Delayed* echolalia refers to utterances repeated after a long period of time has passed.

A typical presentation of immediate echolalia in autism may look as follows: a child is asked a question “Would you want some juice?” and echoes back: “Would you want some juice?”, followed by a pause, and then an answer: “Yes. Which one?” In delayed echolalia the person repeats utterances after a certain period of time which can last from hours and days to years.

Many autistic children may use immediate echolalia temporarily before they develop their own creative spoken language. In other cases, this step may remain and children may use it in combination with delayed echolalia and nonverbal communication as the main means of interaction during their whole life.

III. IMMEDIATE ECHOLALIA AND ITS FUNCTIONS

Echolalia has long been a controversial subject across several research disciplines [3]. Some scholars treated it as an

undesirable [4], non-functional behavior [5] of autistic children. On the other hand, there were a number of investigations considering immediate echolalia in terms of its functionality. Shapiro [6] has underlined that immediate echolalia represents the function of social facilitation; Philips and Dyer [7] suggested that it might even be a necessary stage in the development of a child with autism.

Later on Prizant and colleagues [8] have defined several functional categories of immediate echolalia. Their research was aimed to reveal its functions for autistic children in interactions with familiar adults. Four children were observed (by means of videotaping) in familiar situations such as routine activities at home and play activities in school. After a deep analysis it was discovered that immediate echolalia is more than just a meaningless behavior, as it has been previously defined. Table 1 provides seven functions of immediate echolalia outlined by Prizant and Duchan [8].

TABLE I. FUNCTIONAL CATEGORIES OF IMMEDIATE ECHOLALIA

Functional Categories of Immediate Echolalia	Category	Description
	<i>Interactive</i>	
	1. Turn taking	Utterances are used as turn fillers in the process of verbal exchange
	2. Declarative	Utterances are used to name things or actions (together with demonstrative gestures)
	3. "Yes" answer	Utterances are used to agree with the previous utterance
	4. Request	Utterances are used to ask for objects or other people's actions. This usually includes mitigated echolalia.
<i>Non-interactive</i>		
	5. Non-focused	Utterances are pronounced without any communicative intent and often when the child is highly emotional or is influenced by some physical conditions (e.g., stress, pain)
	6. Rehearsal	Utterances are used for processing the received information, they are followed by words, phrases or actions which show understanding of the echoed utterance
	7. Self-regulatory	Utterances regulate child's own actions. They are produced simultaneously with physical actions.

As it is shown in Table I, immediate echolalia produced by an autistic child may be either used with no aim or may serve different concrete purposes. It may be used for initiating and maintaining interaction or conversation or may be used without any communicative intent.

Wootton [9, 10] has conducted a double investigation with an 11-year-old boy, named "Kevin". His first (conducted in 1995 with Local) and second (conducted in 1999) works were dedicated to manifestation in Kevin's speech of immediate and delayed echolalia respectively. In their first research the scholars described three subcategories of "pure echoes" [9]:

- the ones which were communicatively appropriate;
- the ones which were irrelevant of the communicative situation;
- the ones called "unusual echoes" [9], which were not supposed to have a correlate in the speech of neurotypical children; it was suggested these echoes do not contain any interactional intent.

Local and Wootton [9] found out that almost all Kevin's pure echoes followed "high-constraint adult questions" [11, 12]. The scholars underlined that "unusual echoes" served as a response when Kevin could not quickly shape an answer. Thus, the authors concluded that for Kevin this was the way to acknowledge the adult's question and to mark it as an important one.

IV. DELAYED ECHOLALIA AND ITS FUNCTIONS

During delayed *echolalia*, information is elicited from the prolonged memory. There have been a number of attempts to categorize different types of delayed echolalia.

Dyer and Hadden [13] have tried to observe functions of delayed echolalia in various health limitations particularly in childhood autism. They have suggested six categories of function: "stereotypic", "negativistic", "egocentric", "time-lag", "transferred", "mitigated" [13].

Stereotypic.

The following term was chosen to describe the speech that has no communicative function and where the child is often unaware of the presence of speech. Such stereotypes happen without any cause and do not express any emotions. This category has some peculiar features:

- it is limited in range to few sequences;
- it contains pieces of frequently repeated phrases (e.g. TV advertising slogans, everyday routine phrases produced by familiar people, etc.)
- such words or phrases are repeated in exactly the same manner and order on each occasion without recognizing any syntactical or semantic boundaries.

The scientists [13] consider that such speech has no practical value because of the lack of any communicative intent in the utterance.

Negativistic.

This category is considered to be more optimistic in contrast with the previous one because the speech is already used as a manipulation means.

Egocentric.

The term “egocentric” here is used to denote a self-regulatory behavior. Such words or phrases will be repeated without any changes in the manner of the original utterance. However, in contrast with the first category they express some form of control and self-awareness.

Time-lag.

This category is used to describe phrases that were once heard and then repeated by the child with autism in the unsuitable context to express some will or emotions. Such speech does not fit into the situation and it will be rather hard for adults to make sense of the utterance if they do not know the circumstances in which the original utterance was produced. The scientists underline that such speech is not deprived of communicative function.

Transferred.

In comparison with the previous category this one describes the language behavior which is appropriate to the context; nevertheless, it remains to be echoic. It includes a much larger set of phrases but like in all previous categories all of them are pronounced in the manner of the original utterance.

Mitigated.

When dwelling upon this function Dyer and Hadden rely on the definition given by Fay [14]. According to this definition, mitigated echolalia has slight modifications in an echoed phrase. The following conversation may serve as a typical example:

- “What are you doing?
- What are I doing?” [13]

Moreover, focusing on the secondary use of the term Fay underlines the fact that the echoed phrase is extended:

- “Where does your cat sleep?
- Cat sleep...Can’t find my cat” [13].

It is stressed that the function of mitigated echolalia is to enable the user to adapt to a conversational situation. This type of echolalia is considered to be rather promising, because it demonstrates a child’s intent to produce speech from his own language resources.

One of the most successful attempts to categorize functions of delayed echolalia was made by Prizant and Rydell [15]. They have defined fourteen functional categories. According to the results of their research delayed echolalia varied “among individuals as well as along the dimensions of interactiveness, comprehension of the utterance spoken, and relevance to linguistic or situational context” [15]. *Interactiveness* was determined by the following factors: body posture (if the child was directed to the adult or not), gaze behavior, gestures (pointing and showing), aspects of the utterance (loudness and repetition of the utterance if the respond from the adult was not given). Three criteria were chosen to determine *comprehension*: gestures or movements relevant to the utterance, a verbal response relevant to the situation, behavior showing that the child was waiting for an answer from the adult. An utterance was treated as a *relevant to the situation* if it referred to actions or objects in the surrounding environment. *Relevance to*

linguistic context was based on whether it added some information to previous utterances.

Tables II and III list different functional categories of non-interactive and interactive delayed echolalia respectively.

TABLE II. FUNCTIONAL CATEGORIES OF NON-INTERACTIVE DELAYED ECHOLALIA

Functional Categories of Non-Interactive Delayed Echolalia	Category	Description
	Non-focused	Utterances do not contain any communicative intent, are irrelevant to the situation. They may be used as self-stimulation.
	Situation association	Utterances do not contain any communicative intent, but are relevant to the situation. They may be triggered by an object, person, situation, or activity.
	Rehearsal	Utterances are first pronounced in whisper and then followed by louder interactive production. They are relevant to the linguistic or situational context and show evidence of comprehension.
	Self-directive	Utterances are pronounced before or simultaneously with the action, are produced for regulating own actions. They are relevant to the linguistic or situational context and show evidence of comprehension.
	Non-interactive labeling	Utterances are used to label objects or actions in environment without any intent of a child to address to another person. They are relevant to the linguistic or situational context and show evidence of comprehension.

Having analyzed their results, Prizant and Rydell conclude, that “delayed echolalia encompasses utterances which may serve a variety of functions and which may be produced interactively or noninteractively, with or without evidence of comprehension, and with varying degrees of relevance to the situational or linguistic context” [15]. However, the scientists underline that due to the small number of subjects studied it is impossible to apply this categorization to all children suffering from autism.

Another investigation on delayed echolalia was conducted by Tarplee and Barrow [16] who studied behavior of a 3-year-old autistic child named Kenneth in interaction with his mother. They demonstrated that Kenneth produced a series of delayed echoes (from his favorite cartoon) to trigger a sequential trajectory, in which his mother repeated each utterance produced by her child as he was moving through the series of these echoes. If his mother didn’t echo what he had said in the previous utterance, then Kenneth insisted on an appropriate response by repeating his previous turn. If his mother echoed what he had said, then Kenneth moved on to the next utterance. The scientists proved that “the child’s echoes serve him in important ways as a resource for engaging in reciprocal talk with his mother. Furthermore, these echoes are a resource which is also drawn upon by the child’s mother, to particular interactional ends. Delayed echoes, for this dyad, have an important part to play in the construction of intersubjectivity” [16].

TABLE III. FUNCTIONAL CATEGORIES OF INTERACTIVE DELAYED ECHOLALIA

Functional Categories of Interactive Delayed Echolalia	Category	Description
	Turn-taking	Utterances are used as turn-fillers in the conversation; they may be either relevant or irrelevant to the situation or linguistic context. However, they show no evidence of communicative intent.
	Verbal completion	Utterances are used to finish familiar verbal routines produced by other people. They are relevant to the linguistic or situational context and show evidence of interactiveness. Nevertheless, there is no evidence of comprehension.
	Interactive labeling	Utterances refer to actions or objects of the surrounding environment and are accompanied by the demonstrative gesture. They are used only to point out the referent. Utterances are relevant to the linguistic or situational context and show evidence of both interactiveness and comprehension.
	Providing information	Utterances provide new information not apparent from situational context (they may be initiated by the child or may be used as an answer to another person's utterance). They are relevant to the linguistic or situational context and show evidence of both interactiveness and comprehension.
	Calling	Utterances are used to call attention or to initiate or maintain interaction. If the child fails to get the listener's attention he often demonstrates persistence. Utterances are relevant to the linguistic or situational context and show evidence of both interactiveness and comprehension..
	Affirmation	Utterances are used to show affirmation of the previous utterance produced by another speaker. They are relevant to the linguistic or situational context and show evidence of both interactiveness and comprehension.
	Request	Utterances are used to make a request for objects desired. A child is focused on the object and remains persistent until reaching the aim. A typical feature is a pronominal reversal (using pronoun "you" instead of "I"). Utterances are sometimes accompanied by a demonstrative gesture. They are relevant to the linguistic or situational context and show evidence of both interactiveness and comprehension.
	Protest	Utterances are used to prohibit actions of other people or to show dissatisfaction about the action taking place or the one which is to take place soon. They are often accompanied by movements or gestures to stop the action. Utterances are relevant to the linguistic or situational context and show evidence of both interactiveness and comprehension.
	Directive	Utterances (often in the imperative mood) are used to direct other people's actions. In contrast with the category of requests (focusing on objects) utterances of the present category are produced to instigate actions. They are relevant to the linguistic or situational context and show evidence of both interactiveness and comprehension.

In his second study (the first one was about immediate echolalia; it is described in the previous part of our review) Wootton [10] described Kevin's delayed echolalia. The scientist found out that 50% of the child's speech was delayed echolalia, and mostly these echoes were rather directive and reprimanding ("You do not touch anyone's work, Kevin" [10]). Nevertheless, it was suggested that Kevin's echoes were not just repetitions of adult models he had heard before, but they contained unique intonation features which were never represented in his immediate echolalia. For instance, the same echoed utterances could be produced with a different tone or pitch in various situations. Moreover, the child could omit words from the initial phrase, add new ones or change the words within the initial utterance. Kevin also used delayed echoes when adults showed that interaction was ending. Wootton reported that in most cases the child's echoes were ignored, but sometimes adults responded to them trying to reengage him. This was almost unsuccessful.

Wootton stressed that despite the fact that the child used the adult models Kevin was "in the position of having to manage and coordinate two worlds of involvement, one at the interface with other people, the other focusing around those concerns which are articulated through his delayed echoes" [10].

V. CONCLUSION

To summarize, linguistic and psychological investigations in echolalia occurring in childhood autism are aimed at understanding peculiarities and functions of this phenomenon, focusing on comprehension and interaction. With the help of this approach, the utterances of autistic children are "seen more optimistically as an adaptive response to the constraints of their learning difficulties rather than as an insurmountable barrier to accessing social interactions". [17] The studies mentioned above provide the idea that echolalia is not just a meaningless repetition of one's words or phrases but it is a means of adaptation that contributes to the formation and maintenance of social and emotional attachment and relationships.

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