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### **Semantic-Pragmatic Abilities in Children with Autism**

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#### **ABSTRACT**

Syntax, semantics, and pragmatics form the trifecta of skills for developing social language and communication. These skills relate to language disorders, specifically Semantic-Pragmatic Disorder. Children diagnosed with “Semantic-Pragmatic Disorder” experience delays in language development and have difficulty with comprehension and expression. This research is a descriptive qualitative study using modified Analysis of Language Impaired Children's Conversation (ALICC) by Bishop to obtain information about children with semantic-pragmatic disorder. Further information is also sought on aspects of language disorder (comprehension or expression aspect) which is more prominent. The result of this research can enable accurate explanation and modeling of the communication of children with SPD and the therapist may also make intervention to improve the learning classroom interactions in helping children with autism in the nature of the condition more fully.

*Keywords:* SPD, Autism, ALLIC

#### **Introduction**

Language disorder is associated with the language organ in the human brain that is injured. Language disorder is typically focused on the inability to arrange words grammatically as speech released to be short and contains only basic words arranged in simple way. In general, this kind of language disorder is called Agrammatic Broca's Aphasia which becomes the center of attention and it was studied whether Agrammatic or not related to the inability affecting syntactic competence and how to catch the inability of this syntactic competence within a framework of syntactic theory. Based on research on Broca's area, it was developing to the assumption that Wernicke's aphasia formed a phenomenon reflecting the inability studied on Broca's aphasia. Individuals with Wernicke aphasia typically suffer brain injury at the back of the left temple characterized by an inability to understand the language and failure in word retrieval. These symptoms are considered as the indication of inability of lexical-semantic in Wernicke's aphasia, while syntactic ability is assumed to remain intact (Wimmer, 2010).

In its conjunction with language, people with autism can be classified into two groups, the first is the people with low-functioning Autism and the second is the people with high-functioning Autism. People low-functioning Autism cannot speak at all or are only able to communicate with Echolalic Speech. It is the repetition of a word or group of words spoken by the previous speakers. Echolalic Speech can be divided into two: direct echolalia and delayed echolalia. In direct echolalia, people with Autism directly repeat the words uttered by the previous speakers immediately after completion. While, in delayed echolalia, the repetition of these words are separated by pauses between speech by the previous speaker and people with Autism. People high-functioning Autism have the ability

to speak relatively better than people with low-functioning Autism. However, the language used is still limited to a particular topic they like. People with high-functioning Autism show no progress in their ability to communicate along with the development of linguistic ability, unlike normal children in general.

Research relating to people with Autism and the ability to speak is conducted more from a medical standpoint, not from the angle of language (linguistic). Whereas, pragmatic study (neuro-pragmatics study) becomes very important to find solutions for people with Autism. Neuro-pragmatic study defines the clinical pragmatics as the study of how to use one's language in communicating that has pragmatic mess (Cummings, 2009: 6). Clinical pragmatic study emphasizes on language techniques in adults with language disorders. The results show that, in addition to social factors playing a role, especially in linguistic politeness, because it is more related to patterns of variations in language use between speaker and hearer, the choice of politeness is influenced by brain damage or other problems related to the brain affecting the development of adolescence or adult. (Carrow-Woolfolk and Lynch, 1982: 197).

Therefore it is necessary to study the linguistics for children with Autism given the fact that communication is something that is very difficult because they have problems in developmental language (Handojo, 2003). Research on semantics - pragmatics in people with autism has not been found in Indonesia, also in related research journals currently, it is still difficult to find. Seeing the reality, an estimated of 112,000 children in Indonesia bears autism, in the age range of about 5-19 years old. It means that the number of people with autism increase up to five times each year.

The cause of Autism from the standpoint of neurolinguistics is difficulty of children in functioning the sensory integration and sequencing process (Sidiarto, 1991: 140). This function is the basis for the development of communication systems and linguistics. Disruption of the use of verbal language for communication, communication interaction, and lack of ability to read body language, facial expressions, or tone of voice indicate that neurologically, children suffer damage on both hemispheres of the brain.

Language disorder is a disorder involving the processing of linguistic information. Problems that may be experienced can involve grammar (syntax and/or morphology), semantic - pragmatic, or other aspects of the language. This problem can involve language comprehension disorders, language production, or a combination of both. Language disorders or destruction are generally known as aphasia. Aphasia is a language disorder caused by damage to areas of the brain responsible for language comprehension and expression.

This study examined the extent to which semantics-pragmatics interferences in people with Autism affected understanding in social interaction, communication (verbal and non-verbal) and try to find out to what extent the possibility of appropriate therapy for people with Autism.

### **Theoretical Framework Autism and Language**

In psychological studies, children with autism are integral part of exceptional children. Hadis (2006: 43) states that children with autism are children who experience severe developmental disorder that among other affects the way a person to communicate and relate to others. Autism is also an organic developmental disorder affecting the ability of children to interact and live their lives (Hanafi in Hadis 2006: 2002).

This developmental disorder is highly complex involving communication, social interaction, and activities children's imagination, as well as children's emotion. In other words, in children with autism, there are severe constraints on the ability of the verbal and

non-verbal interaction development. Communication disorders that can occur in people with autism are verbal or nonverbal disorders. Speech and language disorders in people with autism include:

- a) Ability to use a language has been delayed or totally unable to speak. Using words without connecting them with the meaning commonly used.
- b) Communicating with body language and can only communicate in a short time.
- c) Words not understandable to others.
- d) Not understanding or not using words in the appropriate contexts.
- e) Echolalia (mimicking or parroting), mimicking words, sentences or songs without knowing the meaning and monotonous speech.
- f) Speaking is not used for communication and flat expression.

People with autism having communication disorders should be observed and assessed comprehensively including motor oral assessment and speaking motor system. Meanwhile, from the standpoint of neurolinguistics, the cause of autism is the difficulty of sufferer in functioning the sensory integration and sequencing process. This function is the basis for the development of communication systems and linguistics. Disruptions of the use of verbal language for communication, communication interactions, and inability to read body language, facial expressions, or tone of voice indicate that neurologically, the children suffer damage to both hemispheres of the brain.

### **Semantics Pragmatics Disorders (SPD)**

Semantic Pragmatic Disorder/SPD affects the use of language in a social context. People with SPD do not know exactly what to say and in what situations uttered. According Rapin and Allen (in Cummings, 2005) semantic pragmatic disorders belong to the autism spectrum. Furthermore, he also defines semantic pragmatic disorders as language disorders that include:

- a) Language disorders in people with Autism, Asperger or Hyperlexia Symptoms
- b) High-Functioning Autism
- c) Language disorders in the Autism spectrum
- d) Sub category of Specific Language Impairment (SLI) such as the characteristics of people with autism but do not belong to the Autism spectrum

In addition to semantic - pragmatic disorder, people with autism also often experience structural disorder. Pragmatic disorders in SLI and PLI seem do not have a clear causal mechanism compared to other language impairments (Bishop 2000). Pragmatic disorders inhibit a person's ability to communicate verbally and can be a major obstacle in producing effective communication.

As stated above, the pragmatic disorders in the form of developmental language disorders in people with autism (brain damage to the left hemisphere and brain damage to the right hemisphere) are very diverse and not caused by a single cause, but at least can be grouped as follows:

- a) Development language disorder can occur in children, such as semantic pragmatic disorder. Rapin and Allen (in Cummings, 2005) confirms that the sub-group of children of which the language is hampered and shows large deficits in pragmatics are labeled as a child who has semantic-pragmatic syndrome.
- b) Autism; is the most "severe" disorder in clinical linguistics, this disorder is associated with delayed and deviant developmental language.

- c) Learning disability; in this case can be classified as group category of mental retardation, learning difficulties, and syndrome down.
- d) Damage to the left hemisphere of the brain; is called aphasia/dysphasia, the causes include strokes, brain tumors, infections, traumatic brain injury, dementia (Alzheimer's). Dardjowidjojo (2010) assert that the damage to the left hemisphere of the brain results in the emergence of speech disorders. In addition, Cummings (2005) suggests that aphasia categorizes it into two forms, namely fluent type and not fluent type. In fluent aphasia, language comprehension often experiences severe attenuation with fluent speech without exerting efforts, besides often doing echolalia. While in no fluent aphasia, people must strive to produce speech. Usually the sentence structures are reduced and incomplete.
- e) Damage to the right hemisphere of the brain; is language disorders in the left brain and causes a deficit of knowledge in the right brain, affects attention, memory, organization, reasoning, and others.
- f) Closed head injury; is a type of traumatic brain injury, can occur because of the collision, can cause communication deficits.
- g) Schizophrenia; damage languages, disorder to the left brain, the damage is syntactic morphemic.

### Results and Discussion

This study was a qualitative research with samples of two persons with autism aged 18 and 19 years old. The samples were observed and interviewed by referring to the instrument of modified *Analysis of Language Impaired Children's Conversation (ALICC)*. Modified ALICC results would be analyzed to obtain information about semantics - pragmatics on children with Autism. ALICC was a special interview models developed by Bishop (2000) to measure the communication behavioural profile of people with semantics - pragmatics disorders. The analysis results would be used to see how far the skills such as turn-taking, initiating topics, consistency of the topics being discussed are. Then, it was also found information on which aspect of language disorder more prominent, whether it was more prominent on the aspect of comprehension or expression. The research subject was a service centre for people with autism in East Jakarta. A number of people trained in the centre were 15 people aged between 7-19 years old with an average length of staying in this service centre of eight years. For the needs of this research, the study took two people as samples with the age relatively not much different, namely Didi (18 years old) and Sarah (19 years old) with the following considerations:

- a) It could be drawn conclusions mutually reinforcing so that the level of result accuracy was high.
- b) Developments of behavior, intelligence, and maturity were relatively similar.

**Didi:** He is an 18 years old young man. He is the second child of three brothers. His two brothers are not people with autism and living in normal conditions. He has already joined the service centre over ten years. He does not belong to a cheerful child-like Sarah. He is passive, even though he understands the instruction but the autistic trait could be seen dominantly on him.

**Sarah:** She is a 19 years old girl. She is an only child and her father had passed away since she was a toddler. She was raised by her mother, the owner of the service centre for people with autism where she studied. Because of her mother education, she grows into a cheerful child and has a relatively adequate knowledge compared to people with autism in general

To see how far the semantics - pragmatics disorder on the research subjects could affect the understanding of social interaction, it was performed observation using an instrument initiated by Bishop (2000), namely *Analysis of Language Impaired Children's Conversation (ALICC)*. By using ALLIC, it was expected to be able to measure the communications behavioral profile of the research subjects and it could be known how good the skills such as turn-taking, to initiating topics, consistency on the topics being discussed were. Based on ALLIC, the questions were grouped into six categories: Reciprocal Interactions, Hearer Knowledge on the topics, Use of Spilled Words, Topics Arrangement, Communication Styles, Levels of Responding. Figure 1 below illustrates the results of observations performed six times on the two research subjects.

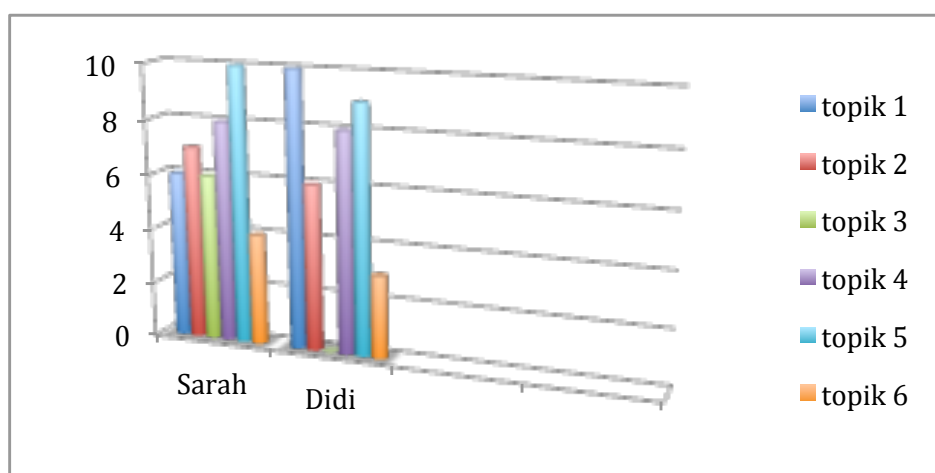


Figure 1. Recapitulation of Observation Results

### Reciprocity/Turn-taking

The ability of mutual interaction involved three things: difficulty responding to questions, often interrupting talks or frequently pausing when speaking, difficulty responding to questions, often interrupting speakers, not responding (silent). Based on the results of observations, Sarah and Didi had differences in mutual interaction.

Basically, Sarah did not find any difficulty in responding to questions asked by interlocutors. Sarah is a child with autism having relatively high compliance when she focused, as well as when she was given a question. When she focused, she is always willing to answer the questions. If she understood, she would answer correctly, even sometimes she answered more than asked. It could be seen in the third observation while doing gymnastics, she told things that were not related to her activities. When she did not understand the questions asked, or she did not understand the meaning of the word mentioned by her teacher, she asked the meaning of the word. For example Sarah asked, *Bu, kasihan apa sih...?* "Mom, what pity means...?", *Cape apa...?* what tired means?"

From the six times of observations made, Sarah often interrupted the speaker. In this case, from the word or phrase she uttered there's always a link to the teacher utterance. For instance, the teacher was telling her about the vehicle, Sarah interrupted *Pramugari Lion Air* "Lion Air flight attendant", when the mealtime approached, Sarah said *agar-agar* "jelly".

Based on the results of observations, it was found that Didi had difficulty in expressive language. The vocabulary he mastered was limited and his articulation was not clear, his voice faltered in almost every word. Didi never started a conversation or asked questions, but he always tried to respond to the teacher or interlocutor. If he did not

understand the questions asked, Didi would repeat the last word of a sentence delivered by the interlocutor.

### **Taking Account of Listener Knowledge**

Knowledge on the topic could be seen from how detailed the speakers responded to questions given by the interlocutors and commented/responded or commented on actions it saw verbally. Based on the observation results, Sarah knowledge on the topic was higher than Didi. For example, Sarah provided spilled response to the teacher questions, even she often interrupted the talk using words she had based on the experience she got from everyday life with her family. While, Didi's knowledge on the topic seemed limited and required further observation.

### **Verbosity**

Sarah had a strong desire to express her thought so she often dominated the conversation and responded more than requested. For example, when the teacher delivered the topic of "shopping", Sarah interrupted by saying *kaifur* for "Carrefour", "cheap" was too often asked. She not only responded things she knew but also asked things she did not understand. Contrary to Sarah, Didi could not be observed because he never asked, initiated a conversation even if the teacher asked, Didi often answered shortly.

### **Topic Management**

Sarah regularity level against what she saw as the ideals was very high. She was obsessed with becoming a flight attendant. She also often reiterated that she wanted to be a flight attendant not only to her friends in class, the teacher, but also the guests who came to the orphanage. For example, when Sarah wanted to pass in front of the guests, she said, "Excuse me, a flight attendant is going through". Although Sarah had adequate knowledge for people with autism, yet Sarah occasionally switched the topic of conversation even though of the topics she gave, there was still a link with the topic still being discussed. If Sarah was relatively steady on the topic, Didi was not. He had difficulty focusing on one topic, for example, when talking about food, Didi interrupted outside the context of conversation *ke Bandung bersama Ibu* "to Bandung, with mommy ", telling about a vacation to Bandung when praying. During the observation, Didi did not seem obsessive about something, but it seemed he was quite happy drawing.

### **Discourse Style**

Sarah showed quite flexible attitude in dealing with people, it was not rigid, dared make eye contact with the speaker. Even though she did not always say the right words, but she looked confident. Didi never made eye contact. If the teacher asked, Didi often hit the table, closed his eyes, busy with his own book even often smiling himself

### **Response Problem**

Sarah had a relatively better vocabulary than their peers. She was able to explain limbs well, although it was performed with utterance not appropriate. For example, the *lutut* "knee" became *lutul*, "*dengkul*" knee became *bengkul*. With good mastery of vocabulary, she could tell about "keternet" for the Internet and "Koforma" for informa.

Didi was able to follow directions and understood the instructions though not always responding with words, but he did it through actions, such as washing dishes, tidying up tables and sweeping floor. Didi mastery of vocabulary could not be observed because he was passive.

### Conclusion

Based on the above discussion, communication disorder occurring on Sarah and Didi is verbal disorder that includes:

#### Sarah

- Using words without connecting them with the meaning commonly used
- Not understanding or not using words in the appropriate context
- Imperfect pronunciation

#### Didi

- Ability to speak has been delayed.
- Echolalia (mimicking or parroting), mimicking the words, sentences or songs without knowing the meaning.
- Communicating using body language and can only communicate in a short time
- Speaking is not used for communication and flat expression

Although it still should be performed observation and assessment completely including oral motor assessment and speech motor systems, based on the observations made, the semantic pragmatic disorders of Sarah and Didi occur in motor function as below:

#### Motor Function of Not Talking:

Functions of motor not talk covers body position and way of walking, coordination, gross and fine motor movements, coordination of the mouth movement, mouth position, smiling to him or herself.

#### Motor Function of Talking:

Ability and efforts in the process of talking like deviation in prosody (velocity, volume, intonation, etc.), fluency, hyper, repetition of talk, willingness and effort spontaneously.

#### Articulation and Phonology Ability:

Verbal communication disorders in which Sarah and Didi can talk but the talk is not used for communication. For example, parroting, echolalia, and talking in wrong situation. In contrast, non-verbal communication disorders appear from simple things such as minimum eye contact, not understanding body language, until speech delay.

Judging from its cause: communication disorders can be caused by disorders in the mouth motor, impaired hearing so cannot hear words and remember words clearly, not understanding the meaning of words and associate them with the situation, and the environment does not support the child to be motivated to speak or to develop his or her abilities.

If the cause is a sound or word processing disorders including mouth motor disorders, usually in talk therapy it will be handled with a certain approach seen from the needs of children, the approach may be blowing or other oral motor. If the cause is hearing impairment, he or she should learn a lot through visual.

Although Sarah is smoother but her articulation is less clear in a few words begin with vowels and end with consonants, talk with short words, have not been able to engage in dialogue or communication, have not been able to give information well. Meanwhile, Didi doesn't have any problems in understanding orders, willing to follow short orders or

instructions given, of which the goal can be understood or not, but he still shows excessive behaviors.

Two contrasting cases of children with autism have been presented. Of these one appeared to fit well with Bishop's notion of pragmatic language impairment, demonstrating disturbance in non-verbal communication as well as language pragmatics. The other child had relatively mild features of pragmatic disturbance but pronounced language developmental difficulties of the type found in children with Specific Language Impairment. To encourage the children social development it is important to tell them specifically what good behaviours are and what it involves to achieve them. Praising specific good behaviour and keeping the child free from negative judgements can reiterate this. It is important to avoid large noisy groups which have no structure as much as possible, as it is situations such as these that can cause anxiety and panic. By keeping a certain amount of predictability to the children daily life it is possible to reduce their anxiety.

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