

# CHAPTER I

## INTRODUCTION

### I. 1. BACKGROUND OF THE STUDY

Speech is one of the primary ways to communicate with our environment. Through intelligible language, we can understand what other people mean, study many sciences, and learn other countries' histories easily. However, among our society, there are many people who have disability in speech. And today, we can find many cases concerning speech disorders which occur on children, besides on adults. Children with speech disorders have trouble in using some speech sounds, which can also be a symptom of a delay. Listeners may have trouble to understand what he is trying to say.

Recently, it has been suggested that lateralization may be complete by the age of five (Fromkin & Rodman, 1988:411). But when children have Cerebral Palsy, muscular disorder, hearing problems, neurological disorders (such as brain injury, infection, and tumor), and cognitive problems (such as in mental retardation), then their acquisition of speech is often affected.

Cerebral palsy is damage to the neuromuscular system that occurs before birth, at birth, or up until the second birthday is referred (Hoffman, Schuckers, and Daniloff, 1989:135). Cerebral palsy embraces the clinical picture created by injury to the brain, in which one of the components is motor disturbance. Thus, cerebral palsy may be described as a group of conditions, usually originating in childhood, characterized by paralysis, weakness, incoordination or any other

aberration of motor dysfunction, cerebral palsy may include learning difficulties, psychological problems, sensory defects, convulsive, and behavioral disorders of organic origin (Kirk, 1962:245). Cerebral palsy has a variety of symptoms including spasticity (tight muscles, or abnormally high muscle tone) poor balance and lack of muscle coordination. Thus, minor motor skills like writing or some speech may be affected.

This study focuses on phonology as one aspect of language, especially that related to sound systems. Concerning phonological processes, alteration of segmental features may occur in producing speech sounds.

One of the language disorders that may occur in children with Cerebral Palsy is developmental phonological disorder. Children show many individual differences in phonological development, and the age at which a child masters all sounds may vary from three to five years old. There are tendencies that children learn voiceless stops before they learn voiced stops, they also learn front consonants such as [p] and [t] before back consonants such as [k] (Hyman, 1975:16). In spite of the language being acquired, the first words children say are produced from a limited set of consonants that are similar to those used in jargon babble. These include sounds produced toward the front of the mouth, e.g. /b/, /p/, /m/, /n/, /t/, and /d/ (Jakobson, 1968, cf. Lewis, 1996:195).

The speech of children with phonological disorder, especially phonological alteration is marked by misarticulations, including deletion, insertion, and metathesis or replacement of sounds for another. These misarticulations represent processes that are present in the speech of young

normal children (e.g. deletions of final consonants), but in phonological disorders more of these processes are used, and their use continues beyond the normal developmental period. In general, the disorders become apparent around the age of 4 years, when normal children become fully intelligible and eliminate almost all of their normal developmental sound patterns.

Hixon et al. (1980, cf. Lewis, 1996:512) reported that 2% of school-age children have phonological disorders. This case is higher for preschoolers, with estimates ranging from 3 to 15%. Younger and or more severely impaired children may have difficulties involving a wide range of speech sounds, including those like /b/, /p/, and /m/ that are acquired early in the developmental sequence. A variety of sound changes may occur, including dropping final sounds (/dɔ/ for *doll*), or leaving sounds out of consonant blends (/bu/ for *blue*). Older and or children who are less severely affected may make only a few kinds of errors, usually substitutions or deletions. Errors in older or more mildly impaired children will occur only on sounds that are acquired later in the developmental sequence (e.g., /s/, /r/, /l/, /θ/). Misarticulations of vowel sounds are rare in this disorder.

Being inspired by the increasing cases concerning Cerebral Palsy and its bad effects toward children's psychological and social life, and since there are still many more researches needed to enrich both linguistic and medical literatures, then the writer is interested in doing a study of developmental phonological disorder, especially phonological alterations occur on children suffering Cerebral Palsy.

## **I. 2. STATEMENT OF THE PROBLEM**

What phonemes are altered by some children with Cerebral Palsy?

## **I. 3. OBJECTIVE OF THE STUDY**

The objective of the study is to find out any phonemes that are altered by some children with Cerebral Palsy.

## **I. 4. SIGNIFICANCE OF THE STUDY**

Hopefully, the result of this study may enrich studies concerning psycholinguistics, neurolinguistics, and provide references for other linguists who are interested in exploring this phenomenon. It is also expected to give input to parents whose children have difficulties in speech, especially those with Cerebral Palsy, and to speech therapists or teachers to train them to speak well. In the long run, the result of this study is also expected to be one of the sources for compiling a guidebook in understanding the language disorders, especially developmental phonological disorders of children.

## **I. 5. SCOPE AND LIMITATIONS**

This study is focused on the discovery of any speech sounds that hard to be produced by some children with Cerebral Palsy, especially those who use verbal language in Elementary School of YPAC (Yayasan Pembinaan Anak-anak Cacat / The Indonesian Society for the Care of Disabled Children) Cabang Surabaya. Children who are recommended to use non-verbal or sign language

are not analyzed. Other children who have conditions as the after-effect of cerebral palsy such as deafness, dumbness, and blindness are not analyzed, too. Other diseases and several associated disorders suffered by respondents are not discussed in this paper. Other linguistic aspects such as morphology, syntax and semantics are not discussed, either.

## **I. 6. THEORETICAL FRAMEWORK**

This study of developmental phonological disorder is supported by two theories of phonological development or phonological processes in children. *First*, a suggestion by Lewis (1996:195) that vowel inventory is mastered quickly (by the age of 18 months) whereas acquisition of the full inventory of consonant sounds to be continues for several more years. The first consonants sounds to be consistently articulated correctly are nasals (/m/, /n/, /ŋ/), stops (/p/, /b/, /t/, /d/, /k/, /g/), and glides (/h/, /w/, /j/). Afterwards, most fricatives (/s/, /ʃ/, /f/, /v/) are articulated correctly. Liquids (/l/, /r/), affricates (/tʃ/, /dʒ/), some fricatives (/θ/, /ð/) are among the last types of sounds to be consistently articulated correctly. Phonological or articulation disorders are characterized by impaired production of developmentally expected speech sounds (Lewis, 1996:512).

*Second*, a theory of phonological alterations that are divided into three main categories by Giegerich (1992:59), which are:

1. **Insertion:** a phonological process in which new phonemes may merge with or appear in formerly occupied positions in the word or morpheme.
2. **Deletion:** a phonological process in which some phonemes may be omitted or disappear from formerly occupied positions in the word or morpheme.
3. **Metathesis:** transposition of phonemes with other phonemes, which may be in the form of replacement, interchanging or substitution of phonemes.

The writer also uses a theory of Cerebral Palsy by Purwadi (1999:6), which tells besides motorist function, children with cerebral palsy also tend to suffer from other disorders concerning other functions such as mental retardation, speech and language disorders. More detailed description of Cerebral Palsy and its defects toward speech and language will be described in Chapter II of this paper.

## **I. 7. METHOD OF THE STUDY**

The method applied in this study is qualitative descriptive.

### **I. 7. 1. Respondents of the Study**

Respondents of this study are 5 students of SD-LB YPAC (Yayasan Pembinaan Anak-anak Cacat / The Indonesian Society for the Care of Disabled Children) Cabang Surabaya who are eligible for the following criteria:

- ✦ Male and female children in critical age and in school age (4 – 15 years old)
- ✦ Suffering from Cerebral Palsy
- ✦ Not suffering from Hearing Impairment
- ✦ Having maximum IQ level approximately 85 and minimum IQ level approximately 60.
- ✦ Diagnosed to have speech disorders and recommended to have speech therapy
- ✦ Using verbal language, not sign language
- ✦ Speaking Indonesian language
- ✦ Having been trained for speech during their education

In this study, there are five respondents as the source of data. The identity and the description of the respondents as follows:

- a. Ingrid Christanti (11 years old). She was born in Surabaya, on 27 April 1993. Now she is in the fourth year of Elementary School. The type of cerebral palsy is Tetraplegic Spastic. She cannot stand on her own two feet. Since she could not sit yet when she was 9 years old, she still sit on her wheelchair in doing any activities up to now. Psychologically, she is always defensive and afraid of other people she does not know well.
- b. Dinda Putri Rahmawati (10 years old). She was born prematurely (6.5 months) in Surabaya, on 18 July 1994. She is now in the first year of Elementary School. The type of cerebral palsy is Hemiplegic

Spastic. She could stand on her own feet since she was 2.5 years old and walk since she was 4 years old. Psychologically, she is unconfident and insecure with other people but her own parents.

- c. Rizki Jayanata (12 years old). She was born prematurely (7 months) in Surabaya, on 14 December 1992. She is now in the third year of Elementary School. The type of cerebral palsy is Tetraplegic Spastic. She cannot stand on her own feet and cannot walk yet, so she always sits on her wheelchair in doing any activities. Psychologically, she has self-confident, cheerful, and very pleasant to know new people around her.
- d. Bella Ayu Retno (10 years old). She was born in Surabaya, on 23 May 1994. She is now in the third year of Elementary School. The type of cerebral palsy is Tetraplegic Athethoid Spastic. She could sit when she was 1.5 years old and walk since she was 3.5 years old. Psychologically, she is very self-confident, cheerful, cooperative and very pleasant with new people around her. She is also classified as hyperactive child.
- e. Anita Carolina (13 years old). She was born in Surabaya, on 4 February 1991. She is now in the sixth year of Elementary School. The type of cerebral palsy is Tetraplegic Spastic. She could sit since she was 3 years old and walk since she was 6 years old. She often shows frequent involuntary/uncontrolled movement, such as writhing movement of the limbs and grimacing face.



### **I. 7. 2. Location**

This study is located at YPAC (Yayasan Pembinaan Anak-anak Cacat / The Indonesian Society for the Care of Disabled Children) Cabang Surabaya, Jl. Semolowaru Utara V/3 Surabaya, an institution which specially gives physical and mental buildings for cerebral palsied and handicapped children (physically and mentally defect children) in Surabaya.

### **I. 7. 3. Instrument**

The writer used a tape recorder as the instrument in doing this study, which was especially used to record the repetition made by respondents for each word read first by the writer.

### **I. 7. 3. Definition of Key Terms**

- 1. Cerebral Palsy :** a neurological disorder that affects the brain's ability to control muscles due to brain injury or abnormal brain development before, during, or after birth.
- 2. Phonological processes/phonological development disorder :** a failure to use speech sounds which are appropriate for the individual's age and dialect. A phonological disorder occurs when the child does not go through the natural maturing process.
- 3. Phonological alteration :** the incorrect use of speech sounds, which affect meaning even though the articulation organs can work effectively.

4. **Phoneme** : a minimal unit that functions to distinguish meaning.
5. **Deletion** : a phonological process in which some phonemes may be omitted or disappear from formerly occupied positions in the word or morpheme.
6. **Insertion** : a phonological process in which new phonemes may merge with or appear in formerly occupied positions in the word or morpheme.
7. **Metathesis** : a phonological process concerning transposition of phonemes with other phonemes, which may be in the form of replacement, interchanging or substitution of phonemes.
8. **Deletion-insertion alteration** : phonological alteration, which involves deletion and insertion of phonemes.
9. **Deletion-metathesis alteration** : phonological alteration, which involves deletion and metathesis of phonemes.
10. **Insertion-metathesis alteration** : phonological alteration, which involves insertion and metathesis of phonemes.
11. **Deletion-Insertion-metathesis alteration** : phonological alteration, which involves deletion, insertion, and metathesis of phonemes.

#### **I. 7. 4. Technique of Data Collection**

Before collecting the data, the writer first made the list of the tested words. The word selection is based on these criteria:

- ✚ The selected words must be consisted of any Indonesian sounds, either vowels, diphthongs, or consonant sounds.
- ✚ Each sound target must be occurred at least once either in initial, medial, or final position of the words.
- ✚ Thus, one word may be consisted of two or more sound targets.

Based on those criteria, the writer listed 44 selected words of Indonesian language which are considered as common words among children vocabulary. The details of the 44 selected words and their places of articulation will be described on the Appendix.

In collecting the data, *first*, the writer read out each word in the list that the writer made previously. Second, asked the respondents to repeat after her and at the same time, she recorded the respondents' utterances. In short, the technique of data collection is:

- ✚ Reading out each word in the list that that writer made previously.
- ✚ Asking the respondents to repeat after her.
- ✚ Recording the respondents' utterances.

### **I. 7. 5. Technique of Data Analysis**

After collecting the data, *first*, the writer transcribed the data based on the phonetic transcription by Marsono. Second, she analyzed all speech sounds produced by respondents based on their place of articulation. Third, she classified those phonemes based on their position of the words (initial, medial, and final) and the three main categories of phonological alteration by Giegerich. Fourth, after transcribing and classifying those phonemes, she would be able to find out which phonemes altered by respondents when they speak. At last, she would draw a conclusion. In short, the technique of data analysis is:

- ✚ Transcribing the data.
- ✚ Analyzing all speech sounds based on their place of articulation.
- ✚ Classifying those phonemes based on the position of the words and the three categories of phonological alterations.
- ✚ Finding out phonemes altered by respondents.
- ✚ Drawing a conclusion

# CHAPTER II

## LITERATURE REVIEW