CHAPTER I

INTRODUCTION

A.1 Background of the Research

People with Broca Aphasia generally have difficulty speaking and constructing sentences, although their understanding of language is often still good. Broca's Aphasia is a language disorder that usually occurs due to the Broca area, which functions in language production. Research in linguistic aspects especially verbs, in context Broca Aphasia is important to understand how grammatical encoding is affected by this condition. Verbs as a central part of sentence structure have a crucial role in conveying meaning (Mendes, 2020), so that analysis of them can provide deeper insight into this disorder. One influential hypothesis posits that the brain regions implicated in Broca's Aphasia are responsible for specific syntactic operations that are necessary for the comprehension and production of sentences (Grodzinsky, 1990).

Studies of Broca's Aphasia often focus on the English language, but regional languages offer a new perspective that can enrich our understanding of this disorder. Javanese is one of the regional languages that becomes the object of comparison in this study. Javanese has a different grammatical structure, and a comparison between English and Javanese speakers with Broca Aphasia can provide valuable insight into verb structure and grammatical encoding interactions. Broca's Aphasia sufferers have the ability to understand what other people say but are unable to produce sentences well. The resulting speech is

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limited to four words or less, there is a loss of conjunction and often difficulty repeating phrases. Individuals with Aphasia may have difficulty naming things. This means they may have difficulty in paraphrasing words accurately or even be unable to speak at all. People with Aphasia may also have difficulty in writing, reading, or even neurological problems.

The inability of people with Broca Aphasia to organize or compose words into sentences, as well as choose appropriate vocabulary and meaning, will cause disruption to the semantic and syntactic processes. In linguistic studies, syntactic and semantic approaches are very relevant for analyzing verbs. The syntactic approach focuses on how words are arranged in sentences, while the semantic examines the meaning of the words and sentences. By using these two approaches, this study aims to explore the relationship between verb use and grammatical encoding in people with Broca's Aphasia. In this way, we can understand how this disorder affects an individual's ability to construct sentences and convey meaning.

The verb is a necessary component of a phrase that expresses the activity, condition, or occurrence carried out by the subject. The different verb tenses and forms that are used to express the action's aspect, time and circumstances are referred to as verb structure. Verbs serve as the building block of a sentence, connecting the subject and the object and conveying important details about what is happening. In research by (thompson, 2003) revealed that Aphasia participant

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have a definite preference for verbs with fewer arguments in their utterances. Verbs are central elements in sentences and play a key role in grammatical encoding.

Grammatical encoding is the casting of a message into an etymological arrangement that adjusts to the linguistic use of a dialect (Levelt, 1989). The grammatical encoding is the phase where the appropriate lemmas are selected based on key vocabulary and categories, affixes and syntactic structure to be conveyed is transformed into a clear and meaningful linguistic form. The grammatical encoding process has three general phases which are entry selection, syntactic structuring, and addition or affixation. Grammatical encoding is a very important process as it ensures that the message is clear, meaningful, and comprehensible to others. Although phonological encoding is also important, without grammatical encoding the message may not be expressed clearly effectively.

Aphasia is a disorder of speech function caused by brain abnormalities, especially in the language center (Katerina A Tetzloff, Joseph R Duffy, Heather M Clark, Rene L Utianski, Edythe A Strand, Mary M Machulda, Hugo Botha, Peter R Martin, Christopher G Schwarz, Matthew L Senjem, Robert I Reid, Jeffrey L Gunter, 2019). Aphasia is a symptom of epilepsy or a neurological disorder (Wambaugh, 2018). Brain damage that leads to Aphasia can be caused by several conditions, such as infections that can affect brain function, brain tumors, or even head trauma

(falling from a high place or traffic accidents). Dementia and Parkinson disease or other diseases of the same type that cause brain cells to deteriorate can cause Aphasia (Hobson, 2018). According to (Darjowidjojo, 2018), Aphasia could be a speech disorder related to the brain. Furthermore, (Darjowidjojo, 2018) said that Aphasia is a dialect disorder (dialect interpretation and coding) which is caused by damage to certain areas of the brain, especially the outer part of the equator called Wernicke's area and in the left forebrain there is a part called Broca's area. Further elaborate, there are eight types of Aphasia including Broca's Aphasia, Wernicke's Aphasia, global Aphasia, conduction Aphasia, anomic Aphasia, primary progressive Aphasia, transcortical sensory Aphasia. In this study, the researcher describes three of the eight of Aphasia mention above.

a) Global Aphasia

Global Aphasia would be identified when the modality is severely impaired. Individuals with global Aphasia (GA) cannot speak or even understand what other people are saying. People with GA are also unable to write and read. This is caused by total brain damage and also paralysis of the body muscles on the right side.

b) Wernicke Aphasia

Wernicke Aphasia (WA) is characterized by difficulty in understanding the language but can speak very fluently. (Karl Wernicke, 1974) is the first person who find out this type of Aphasia. Karl Wernicke found out that this type of Aphasia

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occurs due to damage to the area on the left posterior part of the superior temporal gyrus, now the area known as Wernicke's area.

c) Broca Aphasia (expressive)

Broca's Aphasia (AB) is a language center disorder that occurs due to damage to the part of the brain that regulates writing and speech ability. Broca Aphasia also known as Non-Fluent Aphasia that is neurological disorder characterized by difficulties in speech production while comprehension remain intact (Hasan et al., 2024). Broca's Aphasia is characterized by an inability to speak but the ability to understand what others saying. Individuals with Broca Aphasia have the ability to understand what their interlocutor is saying but have difficulty expressing what they want to say. Their speech often has an incomplete sentence structure or what is commonly named as agrammatism.

The reasons for the researcher to conduct this study are the unique characteristics, clinical relevance, psycholinguistic implications and a lot of empirical data. As the explanation above, Broca Aphasia is an expressive type of Aphasia that has clear characteristics. This communication disorder allows the researcher to explore the relationship between language, cognition and neurology. With this research, the researcher hopes the readers will gain a better understanding of the cognitive processes involved in language production and how the brain regulates linguistic information. Moreover, the researcher hopes that this research not only contribute to the academic knowledge of language disorder but

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also have a practical impact on the rehabilitation and therapy process for patients with Broca Aphasia.

Furthermore, the results of this study aim to provide new insights into the relationship between language structure and neurological disorders, especially those regard to Broca's Aphasia. By understanding how people with these disorders interact with their language systems, people can better support their recovery process and improve the quality of their communication. It is also hope that this research opens the way for further research into other language disorders and better target intervention strategies.

Research on the traits and issue of verb production in the speech of speakers with Broca's Aphasia has been conducted in several languages, including Spanish (Centeno JoseG., 2001) with the title "Agrammatic verb errors and their discourse correlates", Italian "Spontaneous speech in Italian agrammatic Aphasia: a focus a focus on a verb production"(Rossi Eleonora, 2008), Russian "verb production and word order in Russian agrammatic speaker" (Dragoy Olga, 2010), Turkish "A characterization of verb use in Turkish agrammatic narrative speech" (Arslan Secklin, 2016), Indonesian "verb structure and grammatical encoding in the spontaneous speech of Indonesian speakers with Broca Aphasia"(Anjarningsih, 2023). This research is hopefully going to provide comprehensive information regarding the characteristics of agrammatism in agrammatic English speakers which observed through verbal use in natural speech. Previous research used

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direct observation with participants divided into two groups to collect data. Individuals with grammatical disorders in one group while individual with non-brain damage in one group. The data in this study consists of videos of individuals with Broca's Aphasia speaking in English (taken from YouTube) and also individuals with Broca Aphasia speaking in Javanese (taken from direct observation) for comparison. The researcher seeks to examine the process of word production especially verbs and how this relates to grammatical encoding.

A.2 Problems of the Research

The focus of this research is the analysis of the role of verbs in Broca Aphasia sufferers of English and Javanese speakers. This research uses Argument Structure Complexity Hypothesis (ASCH) by Van Valin (2001) to analyze the speech of Broca's aphasia in both Javanese and English provides a systematic approach to understanding linguistic difficulties, comparing differences between languages, and developing more effective therapy strategies. It also contributes to a deeper understanding of the interaction between language complexity and language processing in individuals with language disorders. The researcher focuses on the following problems:

1. How do English and Javanese speakers with Broca Aphasia produce words?

A.3 Objective of the Research

According to what has been explaining in the background of the research above, the writer focuses on the following purposes:

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1. To elaborate the characteristic of Broca's Aphasia in English and Javanese speakers.

A.4 Significance of the Research

This study found several important points. The significance is:

a) Theoretically, this research provides insight into how verb structures in the context of two different languages, which is English and Javanese in people with Broca Aphasia. This is desirable to enrich the knowledge about the differences and similarities in language production between speakers with different languages. This analysis can also test and elaborate existing theories about language disorders, especially in the context of expressive Aphasia. This then helps in understanding more about the relationship between brain structure, linguistic function and communication disorder as well as the cognitive processes involve in language production.

b) Practically, the researcher hopes that this study can improve understanding of how patients communicate, enabling family or relatives and medical professionals to better understand and support the patient's communication recovery process. Furthermore, the study is expected to contribute to training in linguistics and speech therapy.

A.5 Limitation of the Research

In this study, the researcher focuses on researching the role of verb structure in spontaneous speech of Broca Aphasia sufferers in English and Javanese. This research only focuses on one type of Aphasia, namely Broca

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Aphasia. Then the aspect of the study only focuses on verb structure so that it does not pay too much attention to other aspect of language production which are actually also important. This study has a limited number of participants so it might affect the generalization of the result. With only a few subjects, it is difficult to draw conclusions that apply to the entire population of people with Broca's Aphasia may differ between individuals. These variations may affect their ability to produce language and verb structure they use, so the result of the study may not reflect the condition of all Aphasia sufferers. Furthermore, cognitive and emotional factors affecting people with Aphasia, such as level of anxiety or depression, may affect their performance in speech and communication. This may be a variable that was not measured in this study.

A.6 Definition of the Key Terms

a. Psycholinguistics

Psycholinguistics is the study of the interaction between language and mental processes. The main focus of psycholinguistics is how humans acquire, understand, produce , and remember language (Clark Herbert, 1979). The field also combines approaches from psychology and linguistic to explain how language function in the human mind. By understanding the cognitive mechanism behind language use, psycholinguistics seeks to explain how linguistic phenomena, such as language development in children or patients with brain damage especially in language center and language occur in everyday communication.

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In the book “The Perception of Speech” (Cutler, 1992) states that psycholinguistics is a holistic study of language behavior involving psychological and linguistic aspects. Furthermore, psycholinguistics also includes the study of language processing in the brain. In addition, the interaction between language structure and cognitive processes shows that language comprehension depends not only on linguistic knowledge but also on broader cognitive factors such as attention and social context (Cutler, 1992). The result of psycholinguistic studies can provide deep insight into the relationship between neurological structures and language abilities, and help in understanding language disorder that can occur due to brain injury.

b. Verbs

The verb is one that functions to express action, state, or process. In Indonesian, verbs often act as predicates in sentences that show the activity of the subjects. Verbs can be divided into several types including material verbs, mental verbs, and relational verbs. Each type of verbs has different characteristics and functions in the sentence. In the other context, verbs are differentiated depending on the presence of an object in the sentence, namely transitive verbs and intransitive verbs. Research by Thompson (2003) revealed that Aphasia participants have a definite preference for verbs with fewer arguments in their utterances. Verbs are central elements in sentences and play a key role in grammatical encoding.

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c. Grammatical Encoding

Grammatical encoding is a mental process that occurs in language production, where the semantic information which is being encoded is converted into a more appropriate linguistic form. This process is part of a broader model of language production, which includes several stages ranging from concept understanding to pronunciations. In this context, grammatical encoding serves to organize sentence elements, such as subjects, predicates, and objects, according to the grammatical rules that apply in a particular language.

During the grammatical encoding process, the individual speaking must consider various aspects, including syntactic and morphological structures. This involves choosing the right words and placing the words in the correct order to form coherent sentences. For example, in English, the subject-verb-object order is a common structure, whereas in other languages the order can be different. This process is highly automatic for native speakers, but will be a challenge for second-language learners (Bock, 1994).

Grammatical encoding is also closely related to cognitive processing. When people speak, they not only think about what they want to say, but also how to say it grammatically (Weber & Indefrey, 2009). This includes choosing the right tense and aspect as well as using appropriate prepositions and conjunctions. Errors in grammatical encoding can lead to sentences that are ungrammatical or difficult to understand.

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d. Broca Aphasia

Broca Aphasia is often also known as expressive Aphasia. It is a type of language disorder that occurs due to damage to the Broca area, which is centrally in the front left hemisphere of the brain. This area is responsible for language production and grammar processing. People with Broca's Aphasia have difficulty with oral speech and sentence construction, although their understanding of spoken and written language usually remains intact. As Hasan et al., (2024) states, Broca's Aphasia is characterized by an inability to speak but the ability to understand what other saying. The cause of Broca Aphasia is generally brain damage from a stroke, brain injury or tumor. Ischemic stroke, which occurs when blood flow to part of the brain is cut off, is the most common cause. Damage to the Broca area can impair a person's ability to produce language, although other cognitive abilities remain intact.

A.7 Organization of the Research Report

This research consists of five chapters.

Chapter I : Introduction which consist of background of the research, problem of the research, objective of the research, significance of the research, limitation of the research and organization of the research report.

Chapter II : review of related literature, psycholinguistic, grammatical encoding, syntax, semantic, verb structure, Broca Aphasia, review of related research.

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Chapter III : research methodology which cover: research design, data source and data, method of collecting data, technique of collecting data, method of analyzing data.

Chapter IV : data analysis. It consists of presenting data description, data finding, data analysis and discussion.

Chapter V : conclusion and suggestion of the research.

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