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Verbal-Lexical Expression ofIndonesian-Speaking Persons with Broca's Aphasia

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Abstract- This study aims to explain the patterns of construction of verbal expressions in the lexical aspects of Indonesian Broca's aphasia persons. This study was conducted using qualitative-descriptive methods with a case study approach. The results showed that the types of verbal-lexical expressionsof people with Broca's aphasiacomprised the production of quite a lot of language jargon, the occurrence of substitution of target words while speaking, the symptoms of echolalia (repetition of words) and the form of linguistic fillers as of a silent pause, the pause filled form (filled with sounds and words/phrases/clauses), and repetitions of words/topics of conversation.

Keywords: Verbal expression;Broca's aphasia; Indonesia; neurolinguistics

I. INTRODUCTION

Linguistics as a scientific study that makes language the object of study becomes one of the branches of science that has empirical properties(Malmkjaer, 2010). It is called empirical because the data studied and analyzed by linguistics is a lingual fact that can be observed in the field and the truth can be verified. The empirical nature of language which becomes the object of linguistic study is obtained from the results of descriptive analysis of language phenomena that occur in speakers of a particular language. The language that becomes the object of linguistic study is the language spoken by humans that is natural and as what it is; not made up to fulfill the social functions of the speakers.

Neurolinguistically, language is not managed by the entire left hemisphere of the human brain(Burgaleta, Sanjuán, Ventura-Campos, Sebastian-Galles, & Ávila, 2016; Ghaleb, 2017; Wong, Yin, & Brien, 2016). Such conditions have long been understood by experts, precisely after Paul PiereBroca published the results of his study of one of the hospital patients in 1861. Not long after the Broca's discovery, Wernicke and Jules Dejerine had confirmed Broca's theory. The findings published from the symptoms of thislanguage pathology have proven that there is a close connection between the human brain and language skills.

The relationship between the human brain and this language ability eventually attracted the attention of leaders from other disciplines outside the medical world to pursue it. Jakobson (1971),Lecours, Lhermitte, and Bryans have noted that this multidisciplinary approach to language pathology called aphasia was first performed by Th. Alajouanin, A. Ombredane, and Marguerite Durand in 1939(Ghaleb, 2017). In the beginning, they pursued a tendency for the impoverishment of sound patterns in people with aphasia. Along with its development, studies that make the relationship between the human brain and language skills as objects continue to be carried out.

Language becomes a core function for humans in relation to communication, in the personal and individual domains, in addition to the functions of power of recall, perception, cognition, and emotion. The damage that occurs in certain parts of the human brain will cause interference with one's language competence. There are at least four pathologies caused by damage to the part of the brain that causes interference with one's language abilities, namely aphasia, agnosia, apraxia, and dysarthria(Sastra, 2011: 42).

Association Internationale Aphasia (2011) has stated that people with aphasia will experience difficulties in many ways, such as having a conversation; speak in groups or noisy environments; read books, newspapers, magazines or signs on the highway; understanding of jokes or telling jokes; join a program on television or radio; write letters or fill out forms, phone, count, remember numbers, or deal with money; also mentioned his own name or the names of family members. In practice, people with aphasia experience various

difficulties in practicing language, but they are not insane people(Association Internationale Aphasie (AIA), 2011).

Aphasia can be understood as a symptom or disorder that occurs in a person's language skills caused by damage to the cortex(Wright, 2011). Aphasia does not occur in someone who does not have a particular language system. Therefore, aphasia will only occur in someone who already has a certain language systemcompetence. Aphasia as one of a person's language disorders (both oral and written) is caused by a disorder or damage to the part of the brain(Wright, 2011). Brain damage itself can be caused by various diseases, but the most common is caused by circulatory disorders in certain parts of the brain and the presence of brain injury (lesions), can also be a stroke or neurological trauma(Ariwibowo, 2016).

Verbal expressions that exist in people with aphasia also have differences with normal people in general. Therefore, support from various parties to them will greatly help in the process of restoring lingual competence. At the very least, the intensity of communication and socialization with other people with aphasia will make them regain confidence. In fact, people with aphasia will be able to understand each other without words.

Aphasia as a language disorder has attracted linguists to study it. The attention of linguists to this aphasiology is so great. They expect that by studying aphasia, information can be found to better understand the normal language process, language patterns produced by people with aphasia, and how the language process takes place in the brain.

Although studies of aphasia or language disorders have been carried out, studies specifically discuss verbal-lexical expression aspects of Indonesian-speaking persons with Broca's aphasiain more depth have not been done(Goral & Conner, 2013; Kiran, Sandberg, Gray, Ascenso, & Kester, 2013; Mehrpour, Motamed, Aghaei, Jalali, & Ghoreishi, 2014; Tschirren et al., 2010). For this reason, this research was conducted in order to obtain a comprehensive picture of the verbal expression of the lexical aspects of Indonesian-speaking persons with Broca's aphasia studied based on neurolinguistics.

II. METHODOLOGY

This research is based on the concept of a case study. It was conducted using qualitative-descriptive methods with a case study approach. Qualitative methods are chosen by considering the characteristics of the data as they are. The determination of this method is very accommodating with the types and variants of the data to be analyzed.

This research was conducted by considering two approaches, namely theoretical approaches and methodological approaches. Theoretically, the approach used in this study is a neurolinguistic approach. Neurolinguistics is the field of interdisciplinary science between neurology and linguistics; both fields have a very close relationship. The focus of the study was the Indonesian-speaking persons with Broca's aphasia' verbal expression of the lexical aspects.

Meanwhile, methodologically, this study used qualitative methods with a case study approach. Qualitatively it means the data studied and the results of the analysis are obtained from recordings, observations, interviews, or written material and this data are not in the form of numbers(Alwasilah, 2011). While the descriptive approach is based on facts, which are empirical and speakers, so the results are in the form of language as it is. The use of this descriptive method is in line with what Sudaryanto(Sudaryanto, 2015: 131-143)explained that the data obtained is the result of observations of the author without assessing the correct or incorrect data.

The subject in qualitative research, both individuals and groups, was not narrowed down to a separate variable, but was seen as an integral part of a unit(Duff & Anderson, 2015). In this type of research, the subject is observed in depth – inthe genetic clinic approach, it is commonly called the case study approach. Thus, we can understand that case studies are an inseparable part of the qualitative method that makes the object of research in depth to produce descriptive empirical data.

The research data is in the form of verbal expressions of Indonesian-speaking persons with Broca's aphasia. The things that have been done werefirst, literature study, which was a search of previous studies that intersect with this topic. This needs to be done, considering that studies on this topic – with various perspectives – have been carried out even though the quantity is still relatively limited so that there is no overlap between this research and previous studies, and to map the position of this research among studies beforehand. After finding some previous studies that intersect with this study, then a study of concepts that

support this concept would be carried out which focus on issues related to Lingual data and the purpose of this study. Second, the provision of data, which was using a combination of references and competent methods with basic techniques in the form of tapping techniques and advanced techniques in the form of noting and recording techniques. Furthermore, the use of unstructured interview techniques and instruments was another technique in collecting data in addition to elicitation (fishing) techniques(Sudaryanto, 2015). In addition, recording techniques will often be used simultaneously with the aim that when processing, the data can still be heard again in their speech.

Overall, this study took place at the RumahSakitPusatOtak Nasional, Jakarta (National Brain Center Hospital, Jakarta). Total of 3 (three) respondents was used as research samples that met the inclusion criteria (positive Broca's aphasia in Indonesian language, male and/or female, 35 to 75 years old, said they did not mind being included in the study, and could speak Bahasa Indonesia). Determination of the sample was carried out by purposive or emergent technique (Heigham & Croker, 2009) with a proportional ratio.

In its implementation, the method of data collection was done with the help of assessment TADIR (Dharmaperwira-Prins, 2000). Data acquisition was carried out at the research site in two ways, namely guided interviews using research instruments that had been prepared and observations of the ongoing speech therapy process between speech therapists and people with Broca's aphasia. The conversations that resulted from the interview and the speech therapy process were recorded using a recording device with a recording duration of approximately 50 until 60 minutes.

After the data was obtained, the next step was transcription and grouping data into the first data and the second data. What is meant by the first data is the data selected based on the respondent's responses and answer to the referring question that has been prepared. The second data is the data taken from the respondent's responses and answers to free and random questions submitted by the author directly outside of the question data that has been provided in the list of referring questions. The data generated from the author's help – bymentioning letters, the initial term of the intended word, giving examples of the pronunciation of words/sentences, and notifying the characteristics of said words – willalso be included in the second type of data. In addition, the data generated from the process of speech therapy between speech therapists and persons with Broca's aphasia will also be included in the second type of data.

Analyzing data was done by qualitative methods, meaning that the analysis activities carried out relate to general patterns in the form and behavior of existing data that are affected and that are present along with the contexts(Sudaryanto, 2015). The data that has been analyzed were presented descriptively, namely the formulation and disclosure of the results of the analysis using words or sentences.

Furthermore, the collected data was also analyzed using a combination of matching and distributional methods(Djajasudarma, 2010). The equivalent method is defined as a method that makes the elements outside the language as a determinant, detached and not part of the language concerned. In this study, distributional methods were also used, which are methods that analyze data by connecting language links. The technique for elements was directly used as a basic technique by dividing the lingual data into several parts.

III. RESULTS AND DISCUSSION

In this study, three respondents were used as sources of data analysis. The three respondents were Indonesian-speaking persons with Broca's aphasia at the RumahSakitPusatOtak Nasional (National Brain Center Hospital) with different causes. The first respondent succeeded in producing 162 speech constructs based on the topic of conversation, the second respondent managed to produce 56 speech constructs based on the topic of conversation, and the third respondent managed to produce 64 speech constructs based on the topic of conversation. The data that has been transcribed was then classified by giving the code. Code of analysis data was given based on the construction sequence in each respondent. The first three numbers were taken from the sequence of construction and the last number was taken from the respondent's code. For example, the analyzed data taken from the first respondent of construction 56 coded as 056.1. To facilitate the analysis process, data were presented using a data sequence number.

Based on the studies that have been conducted, it was found that there are four types of verbal expressions of lexical aspects of people with aphasia in Indonesian, namely the use of new words (neologistic jargon), word substitution (verbal paraphasia and semantic jargon), word repetition (echolalia) –circumlocution(word

translation) and perseveration (continuous usage of inappropriate linguistic forms), and linguistic fillers forms.

Overall, the type of lexical aspects of verbal expression on speech output of Indonesian-speaking persons with Broca's aphasia is the production of quite a lot of language jargon, the occurrence of substitution of target words when speaking, displaying symptoms of echolalia (repetition of words) – whichinclude circumlocution symptoms and perseveration, and the form of linguistic fillers in the form of a silent pause, a pause filled form (filled with sounds and filled with words/ phrases/clauses), and repetitions of words/topics of conversation.

In relation to language competence, Indonesian-speaking persons withBroca's aphasia generally can produce long, unclear and well-articulated utterances with normal speech features in the form of intonation and other suprasegmental elements. This language competence often gives an impression to listeners and interlocutors that people with Broca's aphasia have language competencies that exceed their normal capacity. That is why people with Broca's aphasia often produce excessive language and cannot be dammed, even though the speech produced is very chaotic. The main thing that has become the hallmark of people with Broca's aphasia– based on the observations on the patients with Broca's aphasia at the National Brain Center Hospital – isthe production of quite a lot of language jargon. That is why Cummings (Cumming, 2010) mentions the type of speech of people with aphasia eloquent as aphasia jargon.

Another feature relating to the lexical aspect of the speech output of Indonesian-speaking persons with Broca's aphasia is the occurrence of the substitution of the target word when speaking. The target word produced by people with Broca's aphasia includes two things, namely recognizable target words and unrecognizable target words. The phenomenon of word substitution with recognizable target words is called verbal paraphasia(Ali, 2017; Cahyantini, Supriyana, & Wahyu, 2018; Dewi, 2019; Sastra, 2007). The symptoms of verbal paraphasia found in Indonesian-speaking persons with Broca's aphasia are formal verbal paraphasia (the relationship with the target word occurs phonemically and morphologically), semantic verbal paraphasia (relationship with the target word occurs conceptually), and mixed paraphasia.

Indonesian-language persons withBroca's aphasia also display symptoms of echolalia (repetition of words), which include symptoms of circumlocution and perseveration. Circumlocution that occurs in people with Broca's aphasia is in the form of a word translation effort to express the meaning of the word intended by the patient. The symptoms of perseveration in people with Broca's aphasia occur with the continuous use of linguistic forms that are not in accordance with the context of speech.

Another thing that has been discussed in the lexical aspects of verbal expressions in people with Broca'saphasia is a linguistic filler form. Based on the results of observations on people with Broca's aphasia, there are at least three types of stunning forms in the utterances of persons with Broca's aphasia. The three forms of filler are silent pauses, filled pause (filled with sounds and filled with words/phrases/clauses), and repetitions of words/topics of conversation.Overall, the lexical realization pattern in the speech of persons with eloquent aphasia can be seen in Figure 1.

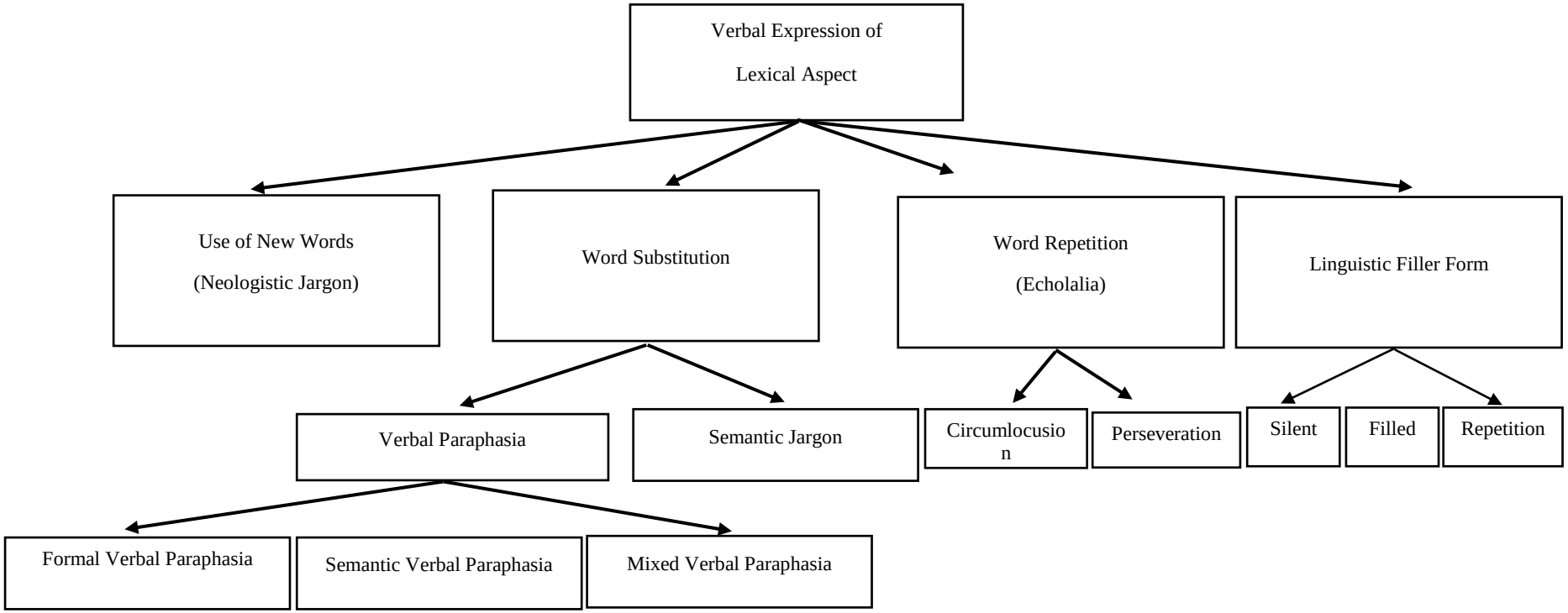

Figure 1.
Verbal expressions of lexical aspects by Indonesian-speaking persons withBroca's Aphasia

3.1 Verbal expression of Indonesian-speaking persons with Broca's Aphasia

a. Use of the new word (Neologistic jargon)

One of the lingual characteristics found in the verbal expression of Broca's aphasia is the emergence of neologistic jargon, namely the use of new words which are not found in the dictionary (KBBI). The intensity of the emergence of neologistic jargon is almost found in all respondents with a different number of occurrences. The first respondent presented 8 neologistic jargons, the second respondent presented 4 neologistic jargons, and the third respondent presented 5 neologistic jargons. That means, there are as many as 17 neologistic jargons that emerge from all existing data. These jargons are *baya* (005.1), *pesang* (042.1), *manggu* (052.1), *sambu* (096.1), *paring* (102.1), *pandung* (132.1), *pantah* (132.1), *popon* (150.1), *kulap* (014.2), *mulha* (024.2), *kaunu* (033.2), *moiy* (036.2), *bante* (055.2), *ngupel* (008.3), *dituk* (012.3), *berih* (019.3), and *gartu* (056.3).

The use of neologistic jargon on the verbal expression of Indonesian-speaking persons withBroca's aphasia can be seen in the following lingual symptoms.These data are the data which contain the symptoms of neologistic jargon. The emergence of these neologistic jargons occurs spontaneously, whether its presence is related to the target words or not. All these words cannot be found in the dictionary (KBBI) and the purpose of the jargon can only be known if it is accompanied by the context and context of the speech so that the topic of the conversation is also known. From there we can only predict the meaning of these neologistic jargons. From the context of the speech, we can predict that the use of the right word is *garpu*(fork) instead of *karsu* or *garsu*.

b. Word substitution

Symptoms of word substitution on the verbal expression of Indonesian-language persons withBroca's aphasia have at least two main symptoms, namely verbal paraphasia and semantic jargon. Both of these symptoms are related to errors in the use and retrieval of words as a substitute word for the target word. The said substitute is something that can be recognized, some are not recognizable. The word that can be identified means that the presence of the substitute word can be predicted and associated with the target word. The relationship between substitute words and target words can be phonemic or morphemic relationships, conceptual relationships, or a combination of the three. Paraphasia which relates substitute words and their strangeness occurs phonemically/morphemically classified into formal verbal paraphasia. Meanwhile,the paraphasia which has a relationship between the substitute word and the target word is conceptually classified into semantic paraphasia.

c. Verbal paraphasia

The verbal paraphasia symptoms of the verbal expression of persons with Broca's aphasia consist of formal verbal paraphasia, semantic verbal paraphasia, and mixed verbal paraphasia. From all available data, there were 22 symptoms of formal verbal paraphasia spread out from all respondents; there are 16 symptoms of semantic verbal paraphasia, and only 1 symptom of mixed verbal paraphasia.Overall, can be seen in Figure 2.

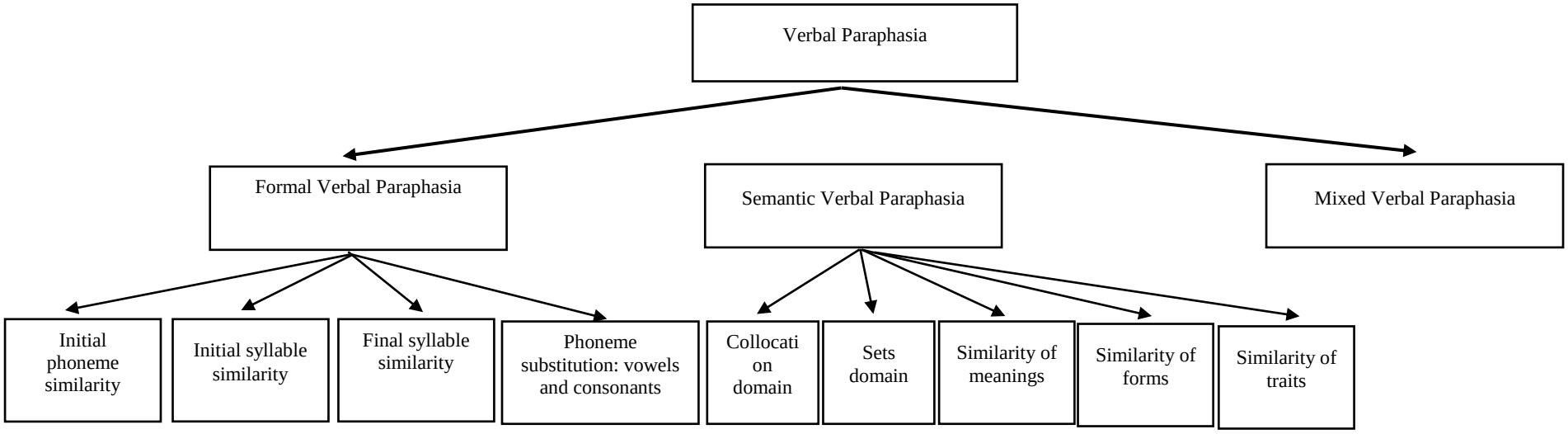

Figure 2.
Verbal paraphasia on verbal expression of Indonesian-speaking persons with Broca's Aphasia

The entire data on verbal paraphasia in the speech output of eloquentBroca's aphasia can be seen in Table 1.

Data Number	Symptom	Data	
		Substitute word	Target word
005.1	Formal Verbal Paraphasia	*bayur*	*sayur*
009.1		*jakartatujuh*	*jakartatimur*
015.1		*bacang*	*bajai*
023.1		*bebek*	*becak*
027.1		*pesayap*	*pesawat*
034.1		*mangga*	*manggis*
018.3		*dibelah*	*di belakang*
056.3		*kartu*	*garpu*
064.3		*senter*	*sendok*
009.1	Semantic Verbal Paraphasia	*gang*	*jalan*
012.1		*kencana*	*kereta*
013.1		*motor*	*mobil*
014.1		*becak*	*bajai*
018.1		*pesawattinggi*	*pesawatterbang*
071.1		*meong*	*kucing*
007.2		*bunga*	*pohonkelapa*
025.2		*malam*	*pagi*
031.2		*harimau*	*singa*
039.2		*kuda*	*kambing*
047.3		*bangku*	*meja*
051.3		*plastik*	*kertas*
002.1	Mixed Verbal Paraphasia	*ayampating*	*ikanpatin*

Table1
Verbal paraphasia

Formal verbal paraphasia

Symptoms that exist in the speech realization of persons with eloquentBroca'saphasia related to formal verbal paraphasia can be viewed from the relationship between the substitute word and the target word, for instance, there is a form of phonemic relationship closeness and there is also a form of close morphemic relationship. However, in the overall data, the intensity of phonemic occurrence of formal verbal paraphasia is more dominant than morphemic formal verbal paraphasia. The reason for phonemic formal verbal paraphasia is more dominant than morphemic formal verbal paraphasia, there must be further research to be able to answer it. One thing is certain, that the error of the recovery of language sounds will be more visible than the morphological error because the sound is the smallest 'raw material' utterances so that the production intensity is the most dominant.

Formal verbal paraphasia, especially phonemic formal verbal paraphasia, appears to be patterned. The patterns that exist in phonemic symptoms of formal verbal paraphasia include equating the initial phoneme, equating the initial syllable, equating final syllable, and phoneme substitution: vowels and consonants.

Formal verbal paraphasia with the initial phoneme similarity pattern including *jakartatujuh* (009.1) as a substitute for *Jakarta timur*words. The word *tujuh*(seven) which is part of numbers in the Bahasa Indonesian was used by respondents as a substitute for the word *timur*(east). The relationship of the two words is not conceptually intertwined, because between the two words there is no relationship at all in concept and meaning. However, the two words have phonemic relationships, namely the initial phoneme /t/ which is in both words. Likewisewith the word *tape* (027.2) which replaces the word *tomat*; the two words are not conceptually and semantically related, because the two words have no relation between meaning and concept.

Formal verbal paraphasia with the initial syllable similarity pattern can be seen from the following data:

(1)*bacang* which substitutes the word *bajai* (data 015.1)
(2) *bebek* which substitutes the word *becak* (data 023.1)

(3) *pesayap* which substitutes the word *pesawat* (data 027.1)
(4) *mangga* which substitutes the word *manggis* (data 034.1)
(5) *pisau* which substitutes the word *pisang* (data 046.1)
(6) *keluar* which substitutes the word *kelinci* (data 075.1)

The relationship between all the dichotomous words above was built not based on the similarity of concepts, but based on the similarity of the initial syllable sound.

Formal verbal paraphasia with the final syllable pattern can be seen from the word *bayur* (005.1) which replaces the word*sayur*(vegetable), and the word*bahaya*(danger) (077.1) which replaces the word*buaya*(crocodile). The formal verbal paraphasia with phoneme replacement patterns: vowels and consonants, can be seen from the word*kumbang*(beetle) (092.1) which replaces the word*kambing*(goat),*kongfo* (002.2) which replaces the *kungfu*, word *patah*(broken) (051.2) which replaces the word*panah*(arrow), and the word *kartu* (card) (056.3) which replaces the word*garpu*(fork). Formal verbal paraphasia with its formation patterns, clearly, can be seen in Table 2.

Data Number	Formal Verbal Paraphasia Pattern	Substitute Word	Target Word
009.1	Initial phoneme Similarity	*jakartatujuh*	*jakartatimur*
027.2		*tape*	*tomat*
015.1	Initial syllable similarity	*bacang*	*bajai*
023.1		*bebek*	*becak*
027.1		*pesayap*	*pesawat*
034.1		*mangga*	*manggis*
046.1		*pisau*	*pisang*
078.1		*sarung*	*sapi*
083.1		*bunga*	*burung*
005.1	Final syllable similarity pattern	*bayur*	*sayur*
077.1		*bahaya*	*buaya*
092.1	Phoneme substitution patterns: vowels and consonants	*kumbang*	*kambing*
002.2		*kongfo*	*kungfu*
051.2		*patah*	*panah*
056.3		*kartu*	*garpu*

Table2
Formal Verbal Paraphasia

Semantic verbal paraphasia

Symptoms of semantic verbal paraphasia in verbal expression of Broca's aphasia are associated with the relationship between substitute words and conceptual and semantic target words. The emergence of symptoms of semantic verbal paraphasia with eloquentBroca's aphasia is patterned. These patterns are based on the similarity of the domain of collocation, the similarity of domain sets, the similarity of meanings, the similarity of forms, and the similarity of traits.

Semantic verbal paraphasia with a collocation domain pattern has a high intensity of appearance compared to other patterns. This pattern can be seen from the word *motor* (data 013.1) which replaces the word*mobil*(car), the word *becak*(pedicab) (data 014.1) which replaces the word *bajai*(bajaj), the word *maung*(tiger in dialect) (data 079.1) which replaces the word *macan*(tiger), the word *dokter*(doctor) (data 005.2) which replaces the word*guru*(teacher), word *bunga*(flower) (data 007.2) which replaces the word*pohonkelapa*(coconut tree), the word*malam*(evening) (025.2) which replaces the word*pagi*(morning), the word*jerapah*(giraffe) (data 036.2) which replaces the word*monyet*(monkey), the word*kuda*(horse) (039.2) which replaces the word*kambing*(goat), and the word*bangku*(bench) (data 047.3) replace the word*kursi*(chair).

Semantic verbal paraphasia with domain set patterns can be seen from the use of the word *gang*(narrow corridor) (data 009.1) which replaces the word *jalan* (street). The semantic verbal paraphasia with a pattern of similarity of meaning can be seen from the use of the word*meong*(meow) (data 071.1) which replaces the

word*kucing*(cat). Semantic verbal paraphasia with a pattern of similar forms can be seen from the use of the word*plastik*(plastic) (data 051.3) which replaces the word*kertas*(paper). The semantic based paraphasia with the similarity of forms can be seen from the use of the word*pesawattinggi*(high plane) (data 018.1) which replaces the word*pesawatterbang*(airplane).Semantic verbal paraphasia with various patterns of formation can be seen in Table 3.

Data Number	Semantic Verbal Parafasia Pattern	Substitute Word	Target Word
013.1	Collocation Domain Pattern	*motor*	*mobil*
014.1		*becak*	*bajai*
079.1		*maung*	*macan*
005.2		*dokter*	*guru*
007.2		*bunga*	*pohonkelapa*
025.2		*malam*	*pagi*
036.2		*jerapah*	*monyet*
039.2		*kuda*	*kambing*
047.3		*bangku*	*kursi*
009.1	Sets Domain Pattern	*gang*	*jalan*
071.1	Pattern of Meanings Similarity	*meong*	*kucing*
051.3	Pattern of FormsSimilarity	*plastik*	*kertas*
018.1	Pattern of Traits Similarity	*pesawattinggi*	*pesawatterbang*

Table 3
Semantic Verbal Paraphasia Pattern

Mixed verbal paraphasia

Symptoms of mixed verbal paraphasia in speech realization of persons with Broca's aphasia occur because of a combination of formal verbal paraphasia and semantic verbal paraphasia in one form at a time. These symptoms occur very little, and the intensity of their appearance is relatively low. Symptoms of mixed verbal paraphasia can be seen from the use of*ayampating*(pating chicken) form (data 002.1) which replaces the form of*ikanpatin*(catfish). In this case, *ayampating* (pating chicken) is a substitute for the word *ikanpatin* (catfish). There are two symptoms of paraphasia at once, namely the substitution of the word*ikan*(fish) by the word*ayam*(chicken) which is a symptom of semantic verbal paraphasia of collocation domain pattern, and the substitution of the word*patin*(catfish) by *pating* which is a phonemic symptom of formal verbal paraphasia.

d. Semantic jargon

Other lingual symptoms that appear on the verbal expression of Indonesian-speaking persons withBroca's aphasia are semantic jargon. This symptom is understood as a mistake in taking words or mentioning words by replacing the target word with a substitute word, but the substitute word in question has no relationship at all with the target word, whether phonemic, morphemic, and conceptual and meaningful relationships. This phenomenon is almost similar to the symptoms of the emergence of neologism jargon. The difference, semantic jargon with the symptoms of neologism jargon is the existence of substitute words in the dictionary. In the case of neologism jargon, the substitute word replaces the target word, not found at all in the dictionary. However, in the case of semantic jargon, a substitute word that replaces the target word can still be found in the dictionary

From the overall data analyzed, there are 10 constructions that contain semantic jargon in people with Broca's aphasia. The ten data is the *negarabangsa*(nation state) word (data 017.1) as a substitute word for the word*pesawatterbang*(airplane); the word*bayam*(spinach) (data 041.1) as a substitute word for the word*pepaya*(papaya); the word *paus*(whale) (data 055.1) as a substitute for the word *buah*(fruit); the word *mbak*(older sister) (data 091.1) as a substitute for the word*kambing*(goat); the word*lampu*(lamp) (data 018.2) as a substitute word for the word*rumah*(house); the word*pohonikan*(fish tree) (data 017.3) as a substitute word for the word*pohonkelapa*(coconut tree); the word*duduk*(sit) (data 022.3) as a substitute

word for*berada*; the word*bunyi*(sound) (data 025.3) as a substitute for the word *rasa* (taste); and the word*makanan*(food) (data 029.3) as a substitute word for *pekerjaan*(work).

e. Word repetition (Echolalia)

Difficulties producing speech in persons with Broca's aphasia can be seen from the existence of speech strategies by saying words, phrases, or other sentences to explain the difficult word to say. Another utterance strategy used by people with Broca's aphasia is by continuously using linguistic forms that are not in accordance with the context of speech. This symptom is known as echolalia, namely the strategy of repeating linguistic forms as an effort to realize the form of words, phrases, or sentences that are difficult to pronounce. Symptoms of echolalia in people with Broca's aphasia can be divided into two types, namely circumlocution–translationof words to express other words indirectly; and perseveration – thecontinuous use of linguistic forms that are not in accordance with the context of speech. Overall, it can be seen in Figure 3.

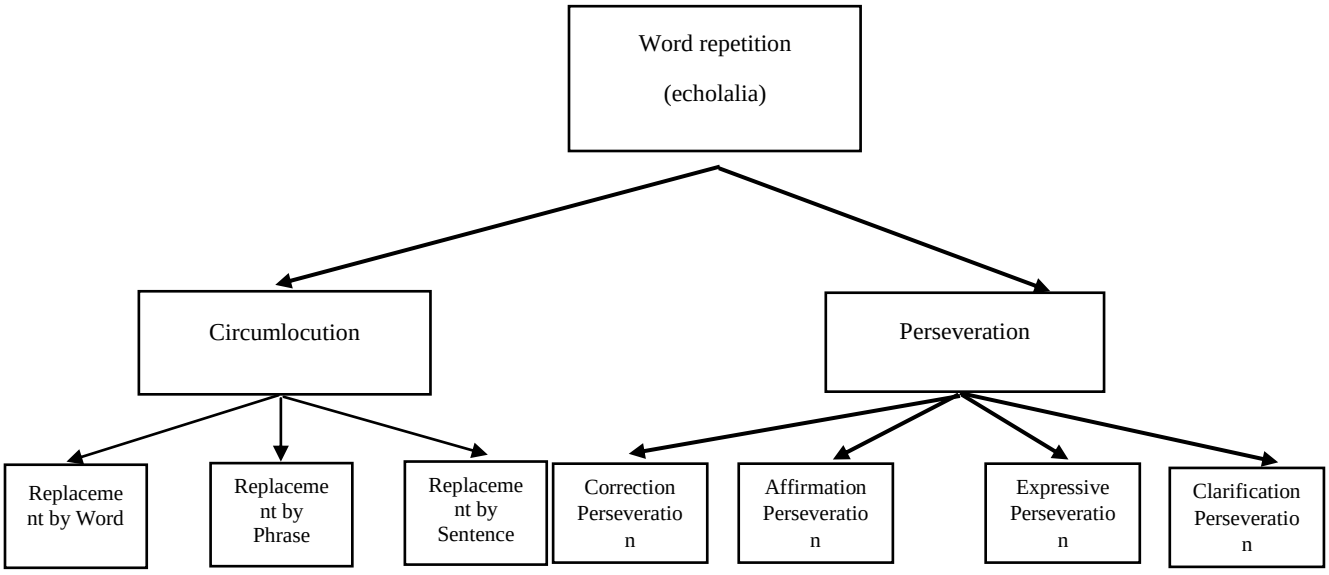

Figure 3.
Words repetition (echolalia) in the verbal expression of Broca's Aphasia

Circumlocution

From linguistic observations to persons with eloquentBroca's aphasia, there will be circumscribed symptoms in the realization of his speech. This symptom is understood as a form of word translation – which is difficult to be spoken by the person – with other words, phrases, or sentences. Of all the data available, there are 13 constructions which contain circumcision symptoms. The thirteen data can be seen in Table 4.

Data Number	Translated Forms	Target Forms
001.1	*makanpagi-pagitadi di rumah*	*Sarapan*
003.1	*yang dimakan, sukasayaanak-anakmakanjuga*	*Ikan*
005.1	*bayurhijauseringmakanjugasaya*	*sayurbayam*
035.1	*iya, itutuh… hitam*	*Manggis*
038.1	*makansayaitu. seringsekali.*	*apel*
071.1	*meong. meong*	*kucing*
095.1	*harumitu. seringpakai di rumah.*	*sabun*
005.2	*ibusekolah*	*guru*

Table4
Circumlocution

The emergence of circumcision symptoms in the speech realization of people with Broca'saphasia is well-versed in the pattern. These patterns are seen from the explanatory form of the target word. At least there are three main patterns of an explanatory form of the target word, namely explanatory form patterns in the form of words, explanatory patterns in terms of phrases, and explanatory patterns in the form of clause/sentences. These three patterns, especially phrases and sentences, will be closely related to the discussion of the pattern of grammatical construction which will be explained in the next discussion (see `Figure 4).

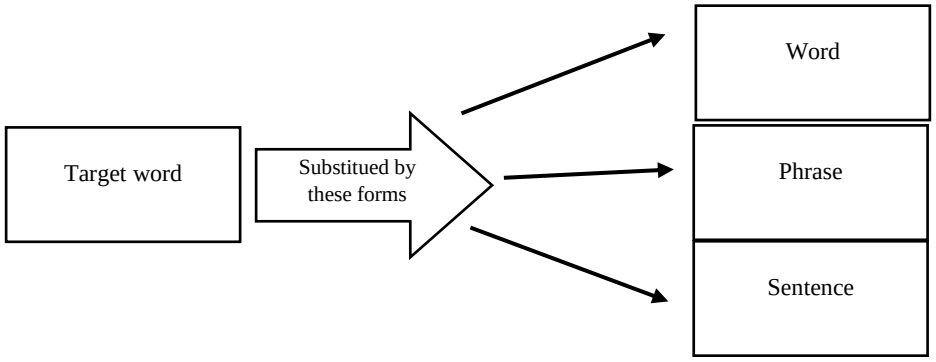

Figure 4.
Circumlocution's patterns

Perseveration

Another symptom that arises in the verbal expression of persons with Broca's aphasia related to echolalia is perseverance. Perseveration is understood as a symptom of repetition of linguistic forms that are not in accordance with the context of speech. In this discussion, the author will also explain the existing functions of the forms of perseverance that arise in the realization of the speech of persons with eloquentBroca's aphasia. If observed, these perseverance forms have similar patterns with filler forms. However, the functions that arise from both are very different. Perseveration arises with paralinguistic functions that will support the communication process, while the filler form appears as an effort to pause because the speaker feels hesitant or is looking for the right expression.

Of all the data available, only 5 forms of perseveration were found from the verbal expression of Broca's aphasia. Although the number is only small, the intensity of its appearance is very high because perseveration is present repeatedly. From these forms of perseverations, the author finally classified them into four types. The classification is based on the functions of the forms of perseverance. The types of perseverations are perseverance with correction functions, perseverance with affirmation functions, perseverance with expressive functions, and perseverance with clarification functions.

Perseverance forms with correction functions, including the "eh" form. Of all the speech constructions with eloquentBroca's aphasia that have been analyzed, the form of "eh" has fairly high emergence intensity. Each speaker feels aware that the form he is saying is wrong, the speaker corrects it directly with other forms that were previously accompanied by this "eh" form.

f. Filler forms

As already explained in previous sections, people with Broca's aphasia have problems with their language competencies, especially in the aspects of speech production. In practice, the people with eloquent Broca's aphasia often give rise to a filler form in the series of speech constructions. This filler form has two main functions, namely as a pause because the speaker feels hesitant about his own speech, and as a pause because the speaker is looking for the right expression.

From the overall data observed, the author sees two main patterns of the filler form existing in the speech realization of Broca's aphasia. Both patterns are ***filler forms with silent pauses*** and ***filler forms with filled pauses***. Filler forms with silent pauses do not have various variants, while filler forms with filled pauses have three derivative patterns, namely ***filler form with pauses filled with sounds***, ***filler forms with pauses filled***

with words/phrases/clauses, and ***filler forms with filled pauses with repetitions word/topic of conversation***.

All patterns of the filler form that have been mentioned above, can be seen in the verbal expression of Indonesian-speaking people with Broca's aphasia. However, the intensity of the appearance of each pattern varies. For the first form of filler pattern, which is the filler form with a pause, it will not be too much explained because this pattern is not too many variants, making it difficult for the exploration process of the data. What will be explored a lot from this discussion is the form of the second pattern of filler, namely the filler form with filled pauses.

From the overall data analyzed, there are six constructions which contain filler forms symptoms with pauses filled with sounds. The six data are *eeh* (005.1), *baa* (005.1), *kee* (012.1), *moo* (013.1), *ba* (016.1), and *be* (024.1).

Data Number	Data	Data Contexts
005.1	*eeh*	*Sayurnyaapa?* Eeeh… apatuh, baru… eh… baaa… bayur. Eh… baya. Bayurhijauseringmakanjugasaya.
005.1	*baa*	*Sayurnyaapa?* Eeeh… apatuh, baru… eh… baaa… bayur. Eh… baya. Bayurhijauseringmakanjugasaya.
012.1	*kee*	*Gambarapainipak?* (kereta) Kencana, eh… kee… kereta
024.1	*be*	*Bukan! tadiseringdisebutsamabapak!* Be…cak. Iya, becak.

Table5
Filler forms with pauses filled by sounds

Overall, the pattern of the filler form found in the verbal expression of persons with Broca's aphasia can be seen in Figure 5.

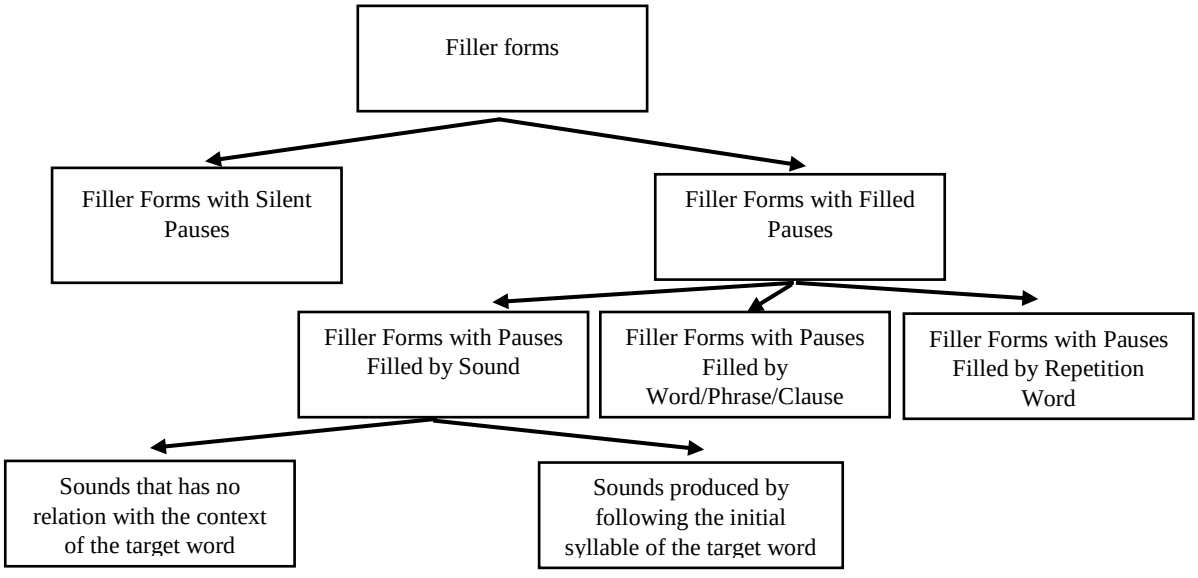

Figure 5.
Filler forms of the speech realization of people with eloquent Broca's Aphasia

IV. CONCLUSION

From the overall analysis that has been done, it can be concluded that overall type of lexical aspect of verbal expression in persons with Broca's aphasia is the production of quite a lot of language jargon, the occurrence of substitution of target words while speaking, displaying symptoms of echolalia (repetition) – whichincludes circumcision symptoms and perseveration, and filler forms in the form of silent pauses, filled pauses forms (filled with sounds and filled with words/phrases/clauses), and repetition of words/topics of conversation.

The intensity of the emergence of neologistic jargon is almost found in all respondents with a different number of occurrences. The first respondent gave rise to 8 neologistic jargon, the second respondent presented 4 neologistic jargon, and the third respondent showed to 5 neologistic jargon. That means, there is as many as 17 neologistic jargons that emerge from all existing data.

Symptoms of word substitutions in the speech realization of eloquentBroca's aphasia have at least two main symptoms, namely verbal paraphasia and semantic jargon. Both of these symptoms are related to errors in the use and retrieval of words as a substitute word for the target word. The said substitute word is something that can be recognized, but some are not recognizable. The word that can be identified means that the presence of the substitute word can be predicted and associated with the target word. The relationship between substitute words and target words can be phonemic or morphemic relationships, conceptual relationships, or a combination of the three. Meanwhile, paraphasia which relationship between substitute words and their strangeness occurs phonemically/morphemically classified into formal verbal paraphasia. The paraphasia which relationship between the substitute word and the target word conceptually happened is classified into semantic paraphasia.

Other lingual symptoms that arise in the realization of speech by people with eloquent Broca'saphasia are semantic jargon. This symptom is understood as a mistake in taking words or mentioning words by replacing the target word with a substitute word, but the substitute word in question has no relationship at all with the target word, whether phonemic, morphemic, and conceptual and meaningful relationships.

Difficulty producing speech in people with eloquent Broca'saphasia can be seen from the existence of speech strategies by saying words, phrases, or other sentences to explain the difficult word to say it. Another utterance strategy used by persons with eloquent aphasia is by continually using linguistic forms that are not in the context of speech. This symptom is recognized by the term echolalia, which is the strategy of repeating linguistic forms as an attempt to realize the form of words, phrases, or sentences that are difficult to pronounce.

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REFERENCES

1. Ali. (2017). Ekspresi Verbal Bunyi Konsonan Bahasa Indonesia Penderita Autistic Spectrum Disorder Dewasa. *Bahastra: Jurnal Pendidikan Bahasa Dan Sastra Indonesia*, *1*(2), 1–7.
2. Alwasilah, C. (2011). *Pokoknya Kualitatif: Dasar-Dasar Merancang dan Melakukan Penelitian Kualitatif Edisi 6*. Jakarta: Pustaka Jaya.
3. Ariwibowo, L. (2016). *Gangguan Produksi Bunyi Ujaran Penderita Afasia karena Stroke Studi Kasus di Dep./SMF Ilmu Penyakit Syaraf RSUD Dr. Soetomo Surabaya*. Universitas Gadjah Mada.
4. Association Internationale Aphasie (AIA). (2011). *Afasia Gangguan Kemampuan Berbahasa*. Retrieved from http://www.afasie.nl/aphasia/pdf/26/brochure1.pdf
5. Burgaleta, M., Sanjuán, A., Ventura-Campos, N., Sebastian-Galles, N., & Ávila, C. (2016). Bilingualisme at the Core of the Brain. Structural Differences Between Bilinguals and Monolinguals Revealed by Subcortical Shape Analysis. *NeuroImage*, *125*, 437–445. https://doi.org/10.1016/j.neuroimage.2015.09.073

6. Cahyantini, I. D., Supriyana, A., & Wahyu, A. (2018). Neurolinguistik, Fonologi, Penyandang Afasia Perkembangan. *Arkhais*, *09*(1), 1–12.
7. Cumming, L. (2010). *Pragmatik Klinis: Kajian tentang Penggunaan dan Gangguan Bahasa Secara Klinis*. Jakarta: Yayasan Pustaka Obor Indonesia.
8. Dewi, M. I. N. (2019). Perubahan bunyi bahasa pada penderita afasia wernicke (kajian pada pasien mr. d). *Ensains*, *2*(2), 68–74.
9. Dharmaperwira-Prins, R. (2000). The Indonesian Aphasia Test "TADIR": Tes Afasia untuk Diagnosa, Informasi, dan Rehabilitasi. *Asia Pacific Journal of Speech, Language, and Hearing*, *5*(3), 143–147.
10. Djajasudarma, F. (2010). *Metode Linguistik: Ancangan Metode Penelitian dan Kajian*. Bandung: Rafika Aditama.
11. Duff, P. A., & Anderson, T. (2015). Case Study Research. In *Cambridge Guide to Research in Language Teaching and Learning*. Cambridge: Cambridge University Press.
12. Ghaleb, A. O. E. (2017). Brain and Language Specialty: Insights from Aphasiology and Neuroimaging. *Theory and Practice in Language Studies*, *7*(12), 1178. https://doi.org/10.17507/tpls.0712.04
13. Goral, M., & Conner, P. S. (2013). Language Disorders in Multilingual and Multicultural Populations. *Annual Review of Applied Linguistics*, *33*, 128–161. https://doi.org/10.1017/S026719051300010X
14. Heigham, J., & Croker, R. A. (2009). *Qualitative Research in Applied Linguistics A Practical Production*. New York: Palgrave Macmillan.
15. Kiran, S., Sandberg, C., Gray, T., Ascenso, E., & Kester, E. (2013). Rehabilitation in Bilingual Aphasia: Evidence for Within-and Between-Language Generalization. *American Journal of Speech-Language Pathology*, *22*, 298–310. https://doi.org/10.1044/1058-0360(2013/12-0085)Di
16. Malmkjaer, K. (2010). *The Routledge Linguistics Encyclopedia Third Edition*. New York: Routledge.
17. Mehrpour, M., Motamed, M. R., Aghaei, M., Jalali, N., & Ghoreishi, Z. (2014). Unusual Recovery of Aphasia in a Polyglot Iranian Patient after Ischemic Stroke. *Basic and Clinical Neuroscience*, *5*(2), 173–176.
18. Sastra, G. (2007). Ekspresi Verbal Penderita Stroke Penutur Bahasa Minangkabau: Suatu Analisis Neurolinguistik. *Linguistik Indonesia*, *25*(2), 21–32.
19. Sastra, G. (2011). *Neurolinguistik Suatu Pengantar*. Bandung: Alfabeta.
20. Sudaryanto. (2015). *Metode dan Aneka Teknik Analisis Bahasa*. Yogyakarta: Sanata Dharma University Press.
21. Tschirren, M., Laganaro, M., Michel, P., Martory, M., Di, M., Abutalebi, J., & Annoni, J. (2010). Language and syntactic impairment following stroke in late bilingual aphasics. *Brain and Language*, *119*(3), 238–242. https://doi.org/10.1016/j.bandl.2011.05.008
22. Wong, B., Yin, B., & Brien, B. O. (2016). *Neurolinguistics : Structure , Function , and Connectivity in the Bilingual Brain*. *2016*.
23. Wright, H. H. (2011). Aphasiology Discourse in aphasia : An introduction to Current Research and Future Directions. *Aphasiology*, *25*(11), 1283–1285. https://doi.org/10.1080/02687038.2011.613452