

Aberration in Indonesian Simple Sentence by Patients with Broca's Aphasia (Afabrok) At USU Hospital

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ABSTRACT

The study is aimed at classifying the aberration the aphasia patients make when they pronounce Indonesian simple sentence; they suffer from nonfluent expression symptoms and at analyzing neurocognitive disorders. The study uses neuropsycholinguistic approach which theoretically states interventions and abilities involve memory, production, thoughts, meanings, and emotions that are very influential in the speech by patients who have damaged area in the gyrus frontalis inferior (Cummings (2010), Shaddock and Shadoch (2010), Gustianingsih (2017). A broken and intermittent sentence such as apo...apo...iha...n.n ya...man...au.tasuk (in the kitchen durian fruit yes eat I like) may be heard to replace aku suka makan durian di dapur 'I like to eat durian fruit in the kitchen.' Several previous studies (see Blumstein (1994), Dardjowidjojo (2000), Sastra (2006), Suhardianto (2006) show that the speech of patients with Broca's aphasia is stagnant and unclear, but in this study the intermittence and exchange of linguistic elements are found. Several types of speech aberration are formed by Afabrok patients with expressive aphasia and some negative symptoms. For data collection the conversation and observation methods were utilized with tapping as the basic technique by recording the conversations among Afabrok patients at USU Hospital, who were classified in light status and able to communicate with researchers. Next, several strategies, namely involved and uninvolved conversation and observation, recording, and writing techniques were involved. For data analysis the equivalence method was used, followed by particular element determinant technique and assisted by articulatory differentiation power. The study selected the simple sentences and the neuro-psychocognitive aberration by patients with expressive aphasia. The later technique was connecting and comparing for speeches from normal people and aphasia patients. It can be concluded that irregularities in the simple sentences and neuro-psychocognitive aberration appeared in the form of production, memory, mind, and emotion do exist. The Afabrok patients were unable to produce correct speech.

Keywords: aberration, Indonesian simple sentence, Broca's aphasia

INTRODUCTION

This research was inspired by the facts that there were language and neurocognitive disorders among patients with Broca's Aphasia, who got stroke and hospitalized at USU Hospital in Medan. The tendency of language disorders is caused by

a disturbance in brain function, impaired thinking, interference with speech production or called Broca's Aphasia. The phenomenon of language in this study becomes the symbolization of idea or the only way to express thoughts orally but not in writing. Five parameters may be used to

see when human beings express their minds with others, such as speaking, listening, repeating, reading, writing (see Syafrita 2017: 17, Gustianingsih 2014: 24).

The function of speech is managed by the cerebral hemisphere, especially the dominant hemisphere and nine out of ten people (90%) are right-handed and have left dominant hemisphere, while the rest, or 10%, is the right hemisphere. Three people out of one tenth are domiciled in the right dominant hemisphere. So only 3% are right dominant hemisphere and the rest (or 97%) live with left brain. Speech shows a person's skill in pronouncing a word and this is called receptive language which refers to someone's ability to understand what is seen and what is heard. Besides, expressive language is also known, referring to someone's ability to communicate both verbally and in writing.

Aphasia refers to a disorder when a damage on the part of brain taking care of language occurs; as a result, there appears a loss of ability to form words or to grasp the meaning of words so that conversation cannot proceed properly. Aphasia creates problems in spoken language (speech and understanding) as well as in written language (reading and writing). Usually reading and writing are more disturbed than talking and understanding. Aphasia might be mild or severe. The severity of aphasia disorder depends on the extent of damage that occurs in the brain.

Aphasia can be divided into three major parts, namely Aphasia motoric (Broca), sensory Aphasia (Wernicke), and global Aphasia. The former has the four characteristics: (i) due to damage in the Broca's area in the inferior frontal gyrus, (ii) patients with this disorder understand the contents of the conversation but cannot answer or express opinions, (iii) it is also known as expressive Aphasia or Broca's Aphasia, and (iv) patients might pronounce one to two words (nonfluent) (see Bickerton 2009, Gustianingsih 2009, Banret 2007, Pease and Pease 2006, Arifuddin 2006, Djajasudarma 2004, Gardner 1982). Sensory

Aphasia might be characterized as (i) it occurs due to the damage in the Wernicke's area in the superior temporal gyrus, (ii) patients do not understand the contents of the speech but can utter words (fluent), and (iii) it is also called receptive aphasia or Wernicke's aphasia. Finally, global Aphasia can cover (i) Broca and Wernicke's areas and (ii) patients do not understand and are unable to pronounce words. Autistic and schizophrenic patients might undergo Wernicke's and global aphasia (see Gustianingsih 2014, 2015, 2016, & 2017).

LITERATURE REVIEWS

Speech Disorders

Neuro-psycholinguistics utilizes clinical data to reveal the physiological and neuro-physiological mechanisms underlying language disorders and the mechanisms have provided a method for assessing the internal structure of language and speech as well as the cerebrum mechanism that underlies it (Luria 2007 & 2009). The impairment in oral and written language is caused by brain cortical fractures. Intensive collaboration between neurolinguistics and neuropsycholinguistics have been successful in examining certain aphasia problems by correlating them to the related linguistic frameworks. In addition, the collaboration also try to link direct physiological evidence to determine the localization of language functions which are obtained experimentally from a normally functioning brain. The neuro-psycholinguistic findings have contributed knowledge about the nature of aphasia phenomena and the implicit language knowledge as described by linguists (Weigl and Bierwisch 2003). The knowledge indicated something about the psychological reality of linguistic assumptions that can embody certain language grammar.

De Saussure (2009), a Sweden's linguist, reveals that language is social but speaking is individual and the two characteristics are interconnected. Language exists in the brain and is social in terms of ontogenesis (historical development) and in

terms of its acquisition. The relationship between auditory images and concepts are obtained by individuals who see the roles of objects and people around them; every person who studies language acquires it in this way. Language learning is social in a synchronic sense and speaking is idiosynchronic because it is determined individually. Language is natural because it is abstract and hides in the brain, while speaking is not natural because it depends on the speakers' willingness and intellectualism.

Broca's Aphasia

The term aphasia is named after the name of a part in the brain having responsibility for producing speech. Broca's aphasia is often called "motoric aphasia" to emphasize the disrupted language production (such as speaking) while other aspects of language do not undergo problems. In case of stroke, damage to Broca's part is the result of the disruption of blood flow through the blood vessels that supply this part with oxygen and nutrients. Generally, Broca's aphasia prevents a person from forming clear words or sentences, but they still understand what others are talking about. Often, people with aphasia feel frustrated because they cannot convey their thoughts into words. Some sufferers can say a few words they use to communicate in this type of speech which is known as telegraphic speech. Because some blood vessels that affect Broca's aphasia also carry blood to the part that controls the movement of one side of the body (usually the right side), Broca's aphasia is usually accompanied by other disorders such as hemiparesis, or hemiplegia on the right side of the body, namely alexia and agraphia.

Indonesian Simple Sentence

Sentences are written having minimal structure of subjects and predicates and their final intonation shows writings that have been equipped with meanings. The sentence element is a syntactic function consisting of subject, predicate, object, complement, and explanation. Sentence are said to be perfect if they have at least

elements of subject and predicate. Simple sentence consists of several sentence structures formed with five sentence elements, namely S, P, O, Comp, and Adv. Based on its grammatical functions and roles, there are six types of sentences that are used as models for the Indonesian simple sentence patterns, namely S-P, S-P-O, S-P-Comp, S-P-Adv, and S-P-O-Comp.

RESULTS AND DISCUSSION

Aberration in the Simple Sentence by Patients with Broca's Aphasia

Aberration in this paper refers to expressions of spoken language from someone who is not universally normal human. This unequal form can be in the form of the misappropriation of the elements, the enhancement of elements, the exchange of elements or linguistic elements that are reversed. The language elements can be subject, predicate, object, or complement. The fact that cannot be denied is that there are linguistic phenomena that are far from the actual conditions. This phenomenon is found in a condition called Broca's aphasia, which is a functional form that is caused by the main factor, namely the disruption of the language process caused by a disturbance in the human brain. The brain is disrupted by many factors and aberration in the brain results in language disturbances so that the narrative of the sufferer deviates from the normal speech, such as the speech irregularities which are expressed by Broca's aphasia sufferers with mild stroke cases (Afabrok).

Sample 1

Researcher : Selamat pagi Bapak. 'Good morning, sir.'

Afabrok 1 : pa...padi...yam...yam...mat...

Researcher : apa kabar Bapak? 'How are you, sir.'

Afabrok 1 : ba...bae...babar...

Data in sample 1 shows that the Afabrok 1 expresses his phatic but does not follow Indonesian grammar, such as when he says pa...padi... yam ...yam...mat..., what he means is selamat pagi 'good morning.' He not only deviates the verbal expression but

also can he not articulate the phonemes correctly but intermittently. The data pa...padi ...yam...yam ...mat... (pa...pagi...lam...mat) displays that the [g] changes to [d], the element [selamat] is only expressed with [yam..yam..mat] and the syllable [se] disappears. Likewise, the structure of ba...bae...babar..., what he really means is kabar baik 'good news.

Sample 2

Researcher : Apakah Ibu sehat hari ini?
'Are you healthy today?'

Afabrok 2 : [de...ad ku...ni...] sehat aku ini 'I am fine'.

From the conversation in sample 2, the formation of simple sentence was successful by Broca's aphasia who becomes a sufferer of stroke although the sentence was not perfect. The simple sentence should be expressed in aku sehat hari ini 'I am fine today' but the Afabrok pronounced de...ad ku...ni... 'fine I am today', which forms P-S-Adv. Patients eliminated the adverb hari ini 'today' and the pronoun aku 'I' but only produces ni (a short form of hari ini) and ku which does not function as clitic nor does it functions as a pronoun. The intermittent expression of Afabrok 2 is not perfect.

The patient's disorder is very different from the normal person's speech; the question apakah Ibu sehat hari ini 'are you fine today' should be replied with aku baik-baik saja hari ini 'I am fine today' or aku sehat hari ini 'I am very healthy today' Health is the focus of the question but a stroke patient might respond orally with different expressions. The structure of simple sentence spoken by Afabrok 2 deviated from the actual structure of Indonesian (compare

<http://sitompulke17.wordpress.com/2009/11/03/struktur-kalimat-bahasa-indonesia/>)

The answers by the Afabrok 2 are actually relevant but there are some elements omitted and interchanged. Cognitively, the Afabrok 2 understands the focus of the question but he is not able to express the right and correct words (Shadoch and Shadoch 2010, Cummings 2010: 202, Gustianingsih 2016). All this situation is

relevant to what experts argue about motoric Aphasia that it occurs due to the damage in the Broca's area in the inferior frontal gyrus, that patient understands the contents of the conversation but cannot answer or express opinions, that such patient is also called Broca's Aphasia, and that patient can only produce 1 - 2 words (or nonfluent).

Sample 3

Researcher : Apakah Bapak sholat tetap jadi imam buat keluarga Bapak?

'Do you become the imam of the prayer for your family member?'

Afabrok 3 : im...im...ma...mi...at...awu an...ana la...(he shakes his head around) bit...bit...ta

aw...awu...

imami sholat aku anaklah sekarang, tidak bisa aku lagi jadi imam

'My son becomes my imam now, I can't be imam anymore.'

Structurally, the expressions Afabrok 3 are not the same as the actual structure of Indonesian; he used his own patterns which is based on his thoughts, or POSK. What he should normally and universally said in Indonesian should be Anak saya yang menjadi imam dalam sholat or Aku tidak bisa lagi menjadi imam 'My son becomes my imam in the prayer' or 'I can't be imam anymore.' This patient also expresses the simple sentence intermittently, imperfectly and in reverse, and uses nonverbal expressions tidak 'no' by shaking the head.

Sample 4

Researcher : Apakah yang Ibu makan setiap hari? 'What do you eat everyday?'

Afabrok 4 : [nat...nat...ti...la...maaa....an.. ay....ya nasi ...nasi...la...makan saya... 'rice of course what I eat.'

Researcher : Apakah Ibu masih mengingat makanan kesukaan Ibu?

'Do you still remember your favorite food?'

Afabrok 4 : nat...nat...ti...la...maaa....an.

Structurally, the expressions nat...nat...ti to denote to nasi 'rice'

appearing in the subject position, maa...an to refer to makan 'to eat' which occupies the predicate function and ay....ya to denote to saya 'I' occupying the object function.

The structure of the simple sentence above indicates nasi makan saya 'rice eats me' although it is grammatikal but logically, it is wrong. Rice as an "inanimate object" will never move and eats humans. This patient's thinking pattern has been reversed compared with the normal human being's thinking patterns. Patient with Broca's Aphasia can express her spoken language but is not sequential, jumping up and down and back and forth. So from the human's point of view what the Afabrok 4 expresses is very illogical. The expressive type stated in this study is very different from the previous studies, despite the intermittent language, but the structure of simple sentence shows the normal person's language sequence (see Suhardiyanto 1993, Djasasudarma 2004, Nagai 2007, Banret 2007, Thompson and Madigan 2007, Arifuddin 2010, Squire 2009).

Neurocognitive and Psychocognitive Aberration by Patients with Broca's Aphasia

Cognitive neurology and cognitive psychology also called neurocognitive and psychocognitive are two branches in the fields of neurology and psychology that study the cognitive processes of human behavior scientifically. Neurocognitive is used to study neurological relationships with human language processes and psychocognitive examines the relationship of psychology 'science that examines human behavior universally' and linguistics as part of linguistic science scientifically that examines language behavior which eventually can be called cognitive psycholinguistics. The science of psychology studies linguistics and human cognitive processes in assessing linguistic behavior. What is meant by cognitive processes are human mental, mind, motivation, and emotional processes in managing human experience and behavior and language behavior. The things that are

mainly studied in cognitive psychology are how humans process, interpret, regulate, store, issue and use their knowledge, including the development and use of language knowledge.

Neuropsycholinguistics applies linguistic, psychological, and neurological knowledge and language problems, such as language teaching, language learning, teaching early and advanced reading, bilingualism, pluralism, speech, such as aphasia, stuttering, autism, brain attacks and et cetera, communication problems, linguistic and thought relations, dialect problems, speech and creolization and other social issues concerning language, such as language and education, language and nation building. Neuropsycholinguistics is an interdisciplinary science that is born as a result of an awareness that the study of language is something very difficult and complicated so that one discipline alone cannot possibly study and explain the nature of that language. So, basically neuropsycholinguistics is a combination or collaboration between neurolinguistics and neuropsychology. What if there is a neurocognitive and psychocognitive disorder in expressing the basic sentence of Indonesian.

Deviation in Motivation

The motivation of Afabroke 1-4 is also deviant because Broca's aphasia which is suffered by the patients eliminates the motivation to speak to anyone; if not invited to speak they are completely silent. After being invited to talk they also did not have the motivation to create new words, and always repeated the vocabularies that were conveyed by others; they were always in difficult situation. The Afabrok1-4 cannot remember the order of words logically to convey to others. In addition to the intermittent speech and unclear articulation, they do not have an expression in speech and usually, common people do not understand their context of speech at all.

Memory Disruption

James, an American psychologist, in 1990s argued that memory was the most

extraordinary brain phenomenon having sensory experiences, perception of the act of changing feelings and remembering, understanding, and deciding. Seen from the interviews as displayed in samples 1-4 the researchers can conclude that the patients' views, perceptions, curiosity, remembering something, and deciding something were bad enough. They never show high curiosity about information, circumstances, and views about themselves and others. All this never happened when they had not had a stroke. The most basic evidence is that there is no difference in their answers to different questions and their long- and short-term memory are disturbed. The Afrabroke 4 understands what is specifically asked, for instance about "eating" or about "not food", the answers are the same for different questions. "To eat" and "food" must be different.

Researcher : Apakah Ibu masih mengingat makanan kesukaan Ibu?

'Do you still remember your favorite food?'

Afabroke 4 : nat....nat...ti....la...maaa....an.

Short-term memory refers to the memory and acquisition of new information in seconds, minutes, hours, and days. It is also called working memory, primary memory, and direct memory which includes remembering and retaining new information, as well as information that was previously understood by previous sufferers formally or informally (James, 1990). Long-term memory is also known as the memory to remember things such as counting, large and permanent vocabulary or sentences in the human brain. George Miller, a pioneer in cognitive and memory psychology research argued that every human being can store large numbers of words and more letters are stored and they could be recalled. Pieces of information are accommodated by short-term memory and sent easily into the long term.

Humans will have no problem remembering a sentence with 14 words like the wicked old witch led the two children into the deep dark forest and through word-

for-word memory, a very fast rate of 10 words per second can be reached. (James, 1990). Having seen the definitions of short- and long-term memory, the Afabrok 1-4 are disturbed and they do not have motivation and creativity in speaking. They will not start greeting people first, except waiting for any greeting.

CONCLUSIONS

The simple sentences can be limitedly expressed by patients with Broca's Aphasia disorder although such sentences deviates from what normal people usually say. Likewise, the neurocognitive and psychocognitive patients also deviate from normal references. Stroke sufferers in this study were unable to remember information that were understood before they had had a stroke; they were speaking expressionlessly and his face was cold. The Afabrok patients from samples 1-4 never start a conversation, never began to greet first, but wait to be greeted by people.

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How to cite this article: Gustianingsih, Ali. Aberration in Indonesian simple sentence by patients with Broca's aphasia (afabrok) at USU hospital. International Journal of Research and Review. 2018; 5(9):212-218.
