



THE EFFECTIVENESS OF SEMANTIC PRIMING TO OVERCOME THE TIP OF THE TONGUE PHENOMENON

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Abstract

Difficulties in retrieving words stored in human memory is called the Tip of the Tongue phenomenon (ToT). This study aimed to measure the effectiveness of semantic priming techniques and sub lexicon codes in facilitating the process of accessing the lexicon when the subjects are in the ToT state. It is a qualitative descriptive study where we conduct an experiment with a psycholinguistic analysis approach. The data are in the form of target words, prime words, and the success rate of the subject in recalling words. The data were obtained from the experiments, interviews, and observations involving 8 students at the tertiary level with an age range of 18-22 years. The results showed that the effectiveness rate of semantic priming in the process of accessing the lexicon is 67,6%, onset 8,9%, first syllable 23,5%. In addition, there were also factors that influenced the subjects' success in recalling words, such as age, character and intelligence, subject selective processes, inhibiting words, health and word acquisition processes. To conclude, associative semantic priming is an effective tool to help overcome the tip of the tongue phenomenon.

Keywords: memory, semantic priming, ToT

Abstrak

Kendala dalam mengakses suatu kata yang sudah tersimpan di dalam memori adalah suatu fenomena yang dinamakan fenomena Ujung Lidah atau the Tip of the Tongue phenomenon (ToT). Penelitian ini bertujuan untuk mengukur efektivitas teknik semantik priming dan kode sub leksikon dalam memfasilitasi proses akses leksikon saat kondisi subjek dalam keadaan ToT. Penelitian ini adalah penelitian deskriptif kualitatif dimana peneliti melakukan percobaan dengan pendekatan analisis psikolinguistik. Data penelitian berupa kata-kata target, kata-kata prime, dan tingkat keberhasilan subjek dalam mengingat kata. Data diperoleh dari eksperimen, wawancara, dan observasi yang melibatkan 8 siswa di tingkat perguruan tinggi dengan rentang usia 18-22 tahun. Hasil penelitian menunjukkan bahwa tingkat efektivitas semantik priming dalam membantu proses akses leksikon adalah 67,6%, onset 8,9% dan suku kata pertama 23,5%. Selain itu ditemukan juga faktor-faktor yang mempengaruhi keberhasilan subjek dalam mengingat kata seperti faktor usia, karakter dan intelegensi, proses

selektif subjek, kata penghambat, kesehatan dan proses pemerolehan kata. Kesimpulan, semantik asosiatif priming cukup efektif dalam membantu subjek mengingat kembali kata yang sempat terlupakan atau pada saat subjek dalam kondisi ToT.

Kata kunci: memori, semantik priming, fenomena ujung lidah

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1. Introduction

In the process of speech production, first step is to determine the ideas that will be conveyed by the speaker. Ideas are represented in the form of words and can be retrieved from memory by utilizing two pieces of information, namely semantic information and phonological information. This process is called semantic representation or lexical retrieval. According to Pinet & Nozari (Pinet & Nozari, 2018), the process of language production goes through several stages, namely the preparation of messages, word selection, correct pronunciation, and the right atmosphere. However, during the language production process, it is common for speakers to experience problems at the lexical access stage. Speakers cannot issue or recall words that are already in their memory. This phenomenon is called the Tip of the Tongue phenomenon (ToT) (Greelane.com, 2018). This condition is usually temporary but it can recur. This can be overcome by implicit learning from mistakes. This reinforces the idea that language production systems are dynamic and continuous, learning from experience despite the experience of errors (D'Angelo & Humphreys, 2015).

The Tip of the Tongue phenomenon (ToT) was first studied in the 1960s. This study was pioneered by Roger Brown and David McNeill in their research journal entitled *The Tip of the Tongue Phenomenon* (Brown & McNeill, 1966). Brown and McNeill had experienced failure to access words in their memory. This prompted them to conduct research on this phenomenon. In their experiment, Brown and McNeill tested the memory of research subjects by presenting a series of words until the subjects reached the ToT state. From this study, Brown and McNeill obtained the results that in the ToT condition, subjects had information about words that they could not remember; most of the information was in the form of the initial and final letters, the number of syllables, and the position of the main accent. This showed that lexical recovery was not carried out in a single step, but involved at least two types of information, namely semantic information and phonological information.

Theoretically, this is in agreement with Levelt, Roelofs and Meyer's serial model

(Levelt, W. J. M., Roelofs, A., & Meyer, A. S. 1999; Levelt, 2020) which suggests that the problem is a failure in phonological activation after the appropriate semantic representation is activated. Brown and McNeill concluded that the Tip of the Tongue phenomenon (ToT) was a condition in which a person could not recall a familiar word, but could remember words with similar forms and meanings. This phenomenon is related to human memory, brain work and lexical processing. Resnik et al found a lasting decrease in the alpha frequency band in the left ventral temporal region while the subject was in the TOT state. This indicated an ongoing semantic search. They also identified reduced beta power in classic peri-sylvian language areas for the TOT state, suggesting that brain areas encoding linguistic memories were also involved in the forgotten word retrieval attempts (Resnik et al., 2014). Ryals et al's study found that subjects in the TOT state experienced pupillary dilation in 91% of their sample. This was the first study to demonstrate a pupillometric correlation of TOT experiences, and these findings provided an important step towards understanding the emotional attributes associated with TOT states (Ryals et al., 2021). The Tip of the Tongue (ToT) phenomenon is still categorized as a relatively normal language barrier because it affects almost everyone. However, with increasing age, these barriers will occur more frequently (Kim & Choi, 2021). The definition of ToT is also expressed by Schwartz, "ToT is the loss of enthusiasm at the threshold of recalling certain words in memory when they cannot do it." (Schwartz, 2002; Brown, 1991). If a person cannot remember a word, but he can remember its first letter, it will be assumed from this that the word is on the access edge (Schwartz & Metcalfe, 2011). The theoretical model related to ToT is The Node Structure Theory (NST). NST says that our cognition arises from priming stimuli that result in the activation of cognitive processing units called nodes. Nodes can represent complete constructions such as sentences or smaller units such as syllables, and range from meaning to phonetics to the muscle movements required to perform an action (Burke, 1991).

This ToT phenomenon began to attract researchers to conduct research. Radel and Fournier suggested that the Tip of the Tongue phenomenon was a failure to remember a word that was previously known and has been stored in memory but the speaker could mention some information about the word, such as word association, first letter, number of syllables, and so on (Radel and Fournier, 2017). Previously, John Field in the book *Psycholinguistics: The Key Concepts, Routledge* (2004) suggested that the Tip of the Tongue (ToT) state indicated the possibility of storing the meaning of a word in one's mind without having to be able to regain its form. This showed that there were two parts of lexical entry, the first related to form and the second related to meaning, and both were independent, meaning that one could be accessed without having to access the other. For example, in

constructing speech, we first identify a particular word with some kind of abstract meaning code and only then incorporate its phonological form into the utterance we plan. A study by Rousseau found that the ToT phenomenon could be socially contagious in small groups, but the process of recalling words could occur more quickly than by a single person (Rousseau & Kashur, 2021).

When one is in the ToT state, the process of extracting words from his or her memory can occur in both the semantic domain and in the phonological domain (Sainte Anastasie, 2021). In the semantic domain, speakers access the lexicon by remembering the meaning of the word in question. While in the domain of phonology, speakers remember how the word was pronounced. Age affects the process of producing phonological information and aspects of the occurrence and resolution of TOT phenomena (Lee & Choi, 2016). In this study, the researcher conducted an experiment using words that were related to the target words to be able to activate the process of retrieving the target words from the memory of the research subjects when the subjects were in the ToT state. Such a technique or method is called associative semantic priming.

Priming in the context of psychology is a technique where the introduction of a stimulus affects how a person responds to the next stimulus (Kendra, 2021). Units of information are stored in long-term memory. The activation of this information unit can be increased or decreased in various ways. The memory of an information unit will become easier to access when the activation of that information unit increases. As activation decreases, that unit of information becomes less likely to be accessed or retrieved from the memory. With priming, these units of information tend to be activated simultaneously, and then other related units of information will become active as well. An individual will respond more quickly if he has the ability to pull related information into memory more quickly. Priming works by activating associations or representations in memory before another stimulus or task is introduced. In this study, the researcher focused on associative semantic priming. Associative semantic priming involves associated words in a logical way. For example, to get the word target soup, if someone is exposed to the words chicken, cream, food, a faster response will be obtained than words that have nothing to do with soup, like chair or radio.

The researchers have examined several studies and research on semantic priming and the Tip of the Tongue phenomenon. The first research was a study conducted by Vera Yulia Harmayanthi (2016) entitled *Semantik Priming dalam Pengenalan Kata-Kata berbahasa Inggris* (Semantics Priming in Recognizing English Words). This study examined the process and benefits of applying semantic priming in the introduction of English words. The results showed that semantic priming helped female students more than male students

in recognizing English words. The second study was conducted by Rahman, Kushartanti, and Anjarningsih (2017) entitled *Tip of The Tongue Analysis in Indonesian Language Speaker: A Case Study* which aimed to explain the level of word retrieval that allowed ToT to occur. The results showed that Indonesian speakers experienced ToT at the level of words, syllables, and letters. The third study by Riyadh Sarhan Al Jebouri entitled *A Study of Speech Error Phenomena T.O.T Experienced by Advanced EFL Speakers* concluded that the ToT phenomenon was the result of inadequate activation at the interface between word forms and sub-lexical representations (Al Jebouri, 2021).

Although the topic of the study is the same, which is about semantic priming and ToT, this study has differences from the previous studies. This study examined the effectiveness of semantic priming as one of the facilitators, along with other sub lexicon codes like onset and first syllable, in overcoming the ToT phenomenon, with the research question "How effective are semantic priming techniques and sub lexicon codes to help or facilitate someone who experiences the ToT phenomenon?" The purpose of this study was to measure the effectiveness of semantic priming and sub lexicon code as a facilitator to help someone recall the word when he/she is in a ToT state.

2. Method

The type of this research is descriptive qualitative (Dqlab.id, 2020) with a psycholinguistic analysis approach that aimed to reveal events or facts, circumstances, phenomena, variables and circumstances that occurred during the research by presenting what actually happened. This is in accordance with the opinion of Sugiyono (2005) about descriptive methods and Bogdan and Taylor in Moleong (2010) about qualitative research.

The method used is the experimental method. The researchers conducted an experiment to test the effectiveness of semantic priming by providing 25 target words along with brief definitions, and 60 prime words, which were presented to eight subjects who were students at LIA Language Institute Bandung. The target words were only specific nouns (proper nouns) and general nouns (common nouns). All target words have been taught beforehand to ensure that the students already knew the target word and then tested them to find out whether they could recall the words or not, and if they could not access their memory of the target words in question then this means they were experiencing the ToT state.

This experiment was carried out individually and online using zoom meeting. Test and interview sessions were approximately 5 to 10 minutes per student. Before starting the experiment, the researcher explained the task to be done and during the test the researcher took notes to record out of the 25 target words, how many words that the

students could remember and how many words they failed to access. When students could not remember one of the target words, the researchers would provide assistance by presenting prime words or words that were meaningfully associated with the target word or also known as applying semantic priming technique. If they still could not remember the word, the researchers would provide assistance in the form of sub lexicon codes such as onset and first syllable. If after being given facilitators, students still could not recall the target word, the researchers would mark it as a failure in retrieving the word which was then followed by an interview session to analyze the cause of the failure whether it was due to inadequate facilitators or internal factors from the research subject. From this, hopefully, the effectiveness of semantic priming and sub lexicon codes as facilitators when students are in the ToT state can be measured.

The data analysis technique used in this study includes four stages, namely data collection, data reduction, data presentation and conclusion drawing. Data collection was done by: (1) conducting document review - researchers looked for relevant references and from reliable sources such as indexed journals and reference books, (2) experiment - researchers conducted vocabulary tests in the form of common nouns and specific nouns (proper nouns) as target words to research subjects consisting of eight students of LIA Language Institute, Pre-Intermediate 4 class, term 4 in 2021, and then provided facilitators in the form of semantic priming, onset, and first syllable clues when the subject experienced ToT phenomenon, (3) interviews - researchers conducted semi-structured interviews to determine the factors that influenced the success of the subject free from the ToT state or on the other side, the factors that influenced the subject's failure to access words from his/her memory. After that, the data were reduced or simplified and then grouped, while irrelevant data were discarded, so that only the data needed to support this research were used. Furthermore, the data were presented in the form of a table which was then described through narrative text. In the last stage, the researcher drew conclusions based on the research data.

3. Result and Discussion

After conducting the research, the researchers found that the ToT phenomenon occurred in each subject at different levels. There were those who reacted quickly after being given a stimulus, but there were also those who took longer time to respond to the stimulus. Each subject had their own way or style in their attempts to recall the information stored in their memory. One way to evoke memories was to look back on when and how the event or information was obtained. Information would be more easily retrieved from memory if the way the information was accessed was similar to the way it was stored so

that when priming, the right priming words would be able to facilitate the subject in retrieving the information stored in their memory.

To prepare the right priming words, researchers looked for relevant information based on events that had been experienced by the subjects, such as experiences during discussions in class or when doing activities outside the classroom. From a total of 25 target words, the researchers only wrote 10 target words in Table 1 because these words caused the subject to experience a ToT state. Other words or sentences that the researcher said at the time of the test and interview were more personal, different for each subject, adjusted to the knowledge that the researchers obtained about the subjects.

Table 1. Target Word List in ToT Phenomenon

Target Words	Prime Words	Subject 1 (Zahra)	Subject 2 (Setiadi)	Subject 3 (Aria)	Subject 4 (Yono)	Subject 5 (Dewi)	Subject 6 (Nanda)	Subject 7 (Putri)
Cemetery	Place							
	Dead	RO	R	RS	R	R	NR	RS
	Burial							
Prison	Place							
	Criminal	RO	R	R	R	RP	RP	NR
	Enter							
Surgeon	Doctor							
	Operation	RP	R	RS	RP	RP	RP	R
	Green							
Cardiologist	Doctor							
	Heart	RP	RP	RP	RP	RP	RP	RP
	Jogging							
Jatiluhur	Dam							
	Purwakarta	R	R	RP	RP	RO	R	R
	PLTA							
Panghegar	Hotel							
	Bandung	NR	RS	NR	RP	R	NR	R
	Jl Merdeka							
Taj Mahal	Building							
	India	R	RP	RS	RP	RP	R	R
	Sultan							
Sumo	Sport							
	Japan	R	RP	R	R	R	R	R
	Big man							
Capoeira	Brazil							
	Music	NR	R	R	NR	R	NR	R
	Dance							
Gimbap	Food							
	Korea	R	NR	NR	NR	RS	R	NR
	Rice							

Note: (R) remember, (RP) remember after being given semantic priming, (RO) remember after being given onset, (RS) remember after being given first syllable, (NR) not remember

Before conducting the test, the researchers made sure that the target words were words that were already known by the subjects because the aim of this study was the activation of words from memory during the ToT state, this means that the subjects had stored the target word in their memory but would they recall the words when they were

asked or needed. The first step of the test is that the researchers provided an overview or general definition of the target words. Target words were divided into 5 categories: public places, doctors, specific places, typical sports, and special foods. Of the 25 target words presented to the subjects, there were 10 words that made some of the subjects in the ToT state. The other 15 words could be recalled easily because they were high frequency words.

Based on the Table 1 above, the researchers then made a table of the percentage of approaches or techniques that were facilitators to activate the process of recalling words stored in the memory. These facilitators include semantic priming, onset and first syllables clues. The percentage was obtained from the success rate of each facilitator from the number of ToT phenomena that have been successfully overcome. This percentage was summed in Table 2.

Table 2. Percentage of Facilitators' Success Rate

Techniques		Percentage	
Semantic Priming	23	67,6%	
Onset	3	8,9%	
First Syllable	8	23,5%	
Total	34	100%	

Based on Tables 1 and 2, conclusion was drawn on the percentage of success and failure of accessing words in memory with the help of three facilitators: semantic priming, onset, and first syllable. The percentage was obtained from the number of ToT phenomena that have been successfully overcome compared to the total ToT phenomena. This is stated in Table 3.

Table 3. Percentage of Success/Failure

Success/Failure		Percentage	
Failure (NR)	14	29%	
Success (RP), (RO), (RS)	34	71%	
Total	48	100%	

Table 1 provides an overview of the 10 target words that place some of the research subjects in the ToT state. First, the subject was given general instructions, for example on the target word Capoeira, the researchers gave a clue: a type of typical Brazilian martial arts. If the subject could immediately mention the target word, the subject column would be marked R (Remember). It meant that the subject did not experience ToT state. Data R (Remember) were not included in tables 2 nor 3 because they were not relevant to the research objectives. Furthermore, if after being given the first clue the subject still could not remember the target word, then the researchers applied associative semantic priming by providing words related to Capoeira such as: martial arts, Brazil, music, dance, in the

Tekken games (one of the characters uses Capoeira moves). If the subject could mention the target word, then the subject column would be marked with RP (Remember after being given the semantic priming). However, if the subject still did not succeed in getting the target word, the researchers provided more assistance in the form of onset (the initial phonological unit of any word that contains an initial consonant or a mixture of consonants), in this example giving the letter "C". If the subject succeeded in mentioning the target word, then the subject column would be marked with RO (Remember after being given Onset), if the subject still could not retrieve the target word, the researchers would give the third facilitator, namely the first syllable of the target word, giving "Ca", the subject who succeeded recalling the target word with the help of the first syllable would be marked RS (Remember after being given the first syllable). RP, RO, and RS data were relevant data and were entered into tables 2 and 3 as a measure of success in accessing words from memory. On the other hand, if after the three facilitators have been given, the subject still could not mention the target word, then the subject column would be marked NR (Not Remember). This meant that the subject had failed to access the target word from his or her memory. At the end, the researchers would tell the target word in question to the subject, only then would the subject remember the target word. This proved that the subject already knew the target word but he or she could not retrieve the word from his/her memory. NR data were relevant data and were entered in table 3 as data on failure to access words from memory.

Table 2 provides an overview of the percentage of success of the facilitator's technique in activating access to the target word in memory. From table 2, it can be seen that the semantic priming technique succeeded in helping the subject in bringing up the target word which was initially forgotten. From a total of 34 successes in overcoming the ToT phenomenon, the semantic priming technique could help the subject recall the target word as many as 23 cases of the ToT phenomenon or 67.6% successful, the onset giving technique helped 3 times or 8.9% successful, and the first syllable clue helps as many as 8 times or 23.5% successful. It can be seen here that the associative semantic priming technique provided more assistance in providing the subject's success in accessing the target word from his or her memory compared to the onset and first syllable techniques.

Table 3 provides an overview of the percentage of success and failure of facilitators, in this case the associative semantic priming technique, onset, and first syllable clues, in activating the lexicon access process in the memory. In this table, it can be seen that the facilitators succeeded in helping the subject activate the lexicon access process 34 times out of a total of 48 ToT phenomena or 71% successful. Meanwhile, the percentage of failures was 29% or 14 failures out of a total of 48 ToT phenomena. From table 3, it can be

concluded that semantic priming and sub lexicon codes (onset and first syllable) were quite effective in helping subjects who were in the ToT phenomenon state to remember words, although they do not guarantee one hundred percent success. One of the obstacles that made the target word fail to pronounce was the language factor. The subjects were all Indonesian who were studying English. When the researchers gave semantic priming, the subjects literally knew the word that the researcher meant (the subject could say the target word in Bahasa Indonesia), but could not pronounce it in English even though the word had been taught to the subject. If this condition occurred, then semantic priming could not penetrate access to the target word, and must be assisted by the onset or even by the first syllable.

After the test session was completed, the next phase was the interview. While conducting the interview, the researchers also observed the movements and body language of the subjects during the interview. During the interview, the researchers asked what had helped the subject remember the target word or vice versa, forget the target word. From the results of interviews and observations, the researchers discovered factors that influenced the success or failure of the subjects in bringing up the target word in addition to the language factor which was one of the obstacles in the process of accessing the lexicon. These factors include:

a. Subject's Character and Intelligence

From the observations, the researchers considered that the subjects had quite varied characters. For example, subject 1 and subject 6 tended to be easily panicked or nervous when taking a test. This condition made it even more difficult for them to access words in their memory even though they are intelligent enough to be seen from their daily scores and exams. So when they were more relaxed, the process of remembering words could be easier. Subjects 5 and 8 were typical students who were enthusiastic and not easily gave up. When they were in the ToT state, they would continue trying to be able to remember the target word. Although sometimes the more they tried to remember, the harder they could remember the word. And finally with the help of the facilitators, both subjects were able to remember the target word. Subjects 3 and 4 tended to be less focused and always seemed in a hurry. Even though they have above average intelligence, when they were in the ToT state, they gave up more quickly and chose to continue to the next target word rather than lingering on the forgotten word. Subjects 2 and 7 tended to be serious in doing things. They were more calm and focused, and tried to remember the target word seriously and even a kind of sensation appeared that made them reluctant to be helped by the facilitators because they believed that they knew the target word and they would retrieve

the word in any seconds. However, they needed the help of the facilitators in the end. This situation was in accordance with the results of research by James et al about the improvement of the ToT condition under evaluative observation. They tested the frequent assumption that word search difficulty increases when a speaker is observed and evaluated. Their experiments provided preliminary evidence confirming the assumption that evaluative observations by third parties could interfere with word search (James et al., 2018). From this description, it is clear that the character of the subject, the condition of the subject, and the intelligence of the subject can affect their success rate in accessing words in memory. Therefore, similar studies with different subjects will get different results.

b. Subject Selective Process

When a subject receives input from the visual and auditory sensors, the subject automatically transmits the input to the brain which then processes the word or input selectively, sorting it out based on things that the subject thinks are important or interesting or not, whether they are passed on to long-term memory or forgotten. For instance, subjects who have interest on typical food will be able to answer questions about food easily. For them, information about food is interesting and valuable information so that their brain will automatically sort this information to be passed on to long-term memory. However, these subjects may find it difficult to answer questions about typical sports because it is possible that they think sports is not an important or interesting input to pass on to their long-term memory. So, information about this will be temporary, easily forgotten, and require greater effort to retrieve this information from their memory. From the above experiment, subjects 2, 3, 4, and 7 had no interest in food, so even though they had eaten *Gimbap*, they did not store the word in their memory and considered it unimportant. Likewise for subjects 1, 3, 6, and 8, for them the name *Panghegar* hotel was not an important name because they did not have memorable memories in that place. It was different compared to subjects 5 and 7 who had memories at the hotel because they had attended an event together at that place. Subjects 2 and 3 both liked to play fighting games, so the word *Capoeira* for them was a high frequency word so that the word automatically appeared whenever needed. From this, it can be concluded that the selective process of the subject greatly determines the success rate of the subject in recalling information from their memory when the information is needed.

c. Inhibitory Word (inhibitor)

When the subject tried to remember the target word, several times the subject was

hampered from bringing up the target word because it was blocked by other words that kept appearing. For example, when the researchers expected the word “cemetery” to appear, the subject repeatedly mentioned graveyard, or tomb. So, these words became barriers to the emergence of the word cemetery. Likewise with a specific object name “Jatiluhur”, the subject remembered Saguling more because the subject was from the city of Bandung. The subject was more familiar with Saguling dam rather than Jatiluhur dam which is located in Purwakarta. So, the word Jatiluhur was more difficult to retrieve. Another case was with the word “Prison”, the word Jail became an inhibitor for Prison. This was because the word jail was more frequently used than the word prison in games. Words such as graveyard, tomb, Saguling, and jail are referred to as inhibitory words because they blocked access to memory which stored the target words cemetery, Jatiluhur, and prison. The subjects were finally able to recall the target words after the researchers asked them to “discard” the inhibitor word and focus on the target word while being given the help of the facilitators. High-frequency words that have the same meaning or are related to low-frequency words tend to be a barrier to low-frequency words. Therefore, low frequency words become vulnerable and often forgotten. Subjects tend to experience the ToT phenomenon with low frequency words.

d. Word Acquisition Process

When and how a word is acquired by memory and then classified whether to be stored in long-term or short-term memory also affects the activation of the word in memory when the word is recalled. When the subject is reminded in the same way as when the subject stores a memory of information or event, the memory activation process will run faster and easier. This is possible due to the help of context. This is in line with the connectionism model of Rumelhart and McClelland (1987) which assumes that the mind consists of so many basic units that are interconnected in a neural network where mental processes in the form of interactions between these units occur (Kompasiana.com, 2019). The interaction can be a stimulus or can also be an obstacle for these units. To retrieve information, things related to that information can provide a chain reaction that activates other pieces of memory so that a connection is established. The results of this connection establishment can provide a complete picture of the required information. When researchers conducted semantic priming, in addition to providing prime words related to the target word, the researchers also associated the target word with events that had been experienced by the subjects. For example, in the hotel name category, Panghegar, the researchers reminded the subjects about the event that was once held in that place. So, when the subjects were assisted in the same way as when the subject received the

information, the possibility of the subject being able to escape from the ToT phenomenon state would be greater.

e. Age and Health Factors

In this study, the researchers did not include age and health factors as factors that influence the success of the subject in accessing information in his or her memory. This is because the researchers conducted research on students with a fairly close age range between 18-22 years old. However, in the previous studies conducted by Brown and McNeill, subjects involving in the test were from various age ranges. From their research, it is known that age also affects a person's ability to remember information. Older people tend to experience the ToT phenomenon more often than younger people. This can also be a physiological sign of aging, because the function of the nervous system decreases in old age and can no longer regenerate itself. Adults with Mild Cognitive Impairment (MCI) have decreased phonological access abilities (Campos-Magdaleno et al., 2020). Adults with Subjective Memory Complaints (SMCs) experience a significantly higher frequency of ToT phenomena than those without SMC. In addition, subjects with SMC exhibited significantly lower levels of resolution, both spontaneously and following syllable cues, compared to those without SMC. SMC can be an early marker of degenerative diseases that cause cognitive dysfunction (Kim et al., 2020).

4. Conclusions

The Tip of the Tongue (ToT) phenomenon is a normal phenomenon and can happen to anyone. However, this phenomenon will become more frequent when one is getting older. This ToT phenomenon is closely related to human memory. Human memory capacity is very large which is divided into short-term memory and long-term memory. Sensory memory is part of short-term memory, where information is obtained through the activity of receptor cells, namely sight and hearing, then converted into a form of information that can be processed by the brain. These memories, usually unconscious, last for a very short time, ranging up to three seconds. This sensory memory acts as a means of filtering information, storing important information, and forgetting unimportant information. If the information is considered important it will be passed on to long-term memory. Memories stored in long-term memory are permanent. Storage in long-term memory is very organized so that the memory retrieval process can also be fast and precise. Knowledge that is considered important for individuals will be passed on to long-term memory. However, because of the large amount of data stored there and also other factors, sometimes humans experience the ToT phenomenon, having difficulty remembering

something that is already stored in their memory. If the information in the memory is urgently needed to be released, for example when a student is doing an exam or when a witness is being questioned by the authorities, then an appropriate facilitator is needed to assist the memory activation process.

In this study, the researchers tested one of the ways or techniques that can help the process of activating access to memory, namely the semantic priming technique as the main technique and the onset and first syllable clues as a secondary technique. The researchers revealed the effectiveness of the associative semantic priming technique, which was then assisted by the onset and the first syllable as facilitators to activate the process of accessing word in one's memory. From the results of the study, the researchers concluded that the success rate of these three facilitators reached 71%, considered as quite effective. However, researchers cannot deny that similar studies can give different results because there are other factors that influence a person's success in accessing information stored in his memory. These factors include: language barrier for bilingual subjects, subject's character and intelligence, subject's selective process, presence of inhibiting words, process of how information is obtained, and subject's health and age factor. From the results of this study, it can be concluded that the semantic priming technique has a significant effect on accessing forgotten information stored in memory. The application of semantic priming in education can help students to be able to remember information, subject matter, and knowledge better. The memory activation process can be accelerated faster so as to minimize the possibility of the ToT phenomenon occurring. The researchers hope that the results of this study can contribute to the world of science, especially in the field of psycholinguistics and can also be applied to other aspects of real life that involve the retrieval of important information from memory.

5. References

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