

## Lexical access mechanisms of Indonesian speakers: A study case of a daily conversation in a college

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### Abstract

*This study aims to examine the mechanisms of lexical access in native speakers from a neurolinguistic perspective, with a particular focus on the processes of activation and selection of lexical representations in spontaneous spoken discourse. This research employs a descriptive qualitative approach, with data consisting of naturally occurring utterances produced by five native speakers of Indonesian. The data were collected through recorded conversations and analyzed by identifying surface-level linguistic markers, such as pauses, repetitions, self-repairs, and lexical stress, which reflect the dynamics of lexical access. The findings indicate that the process of lexical activation does not occur in a linear manner; rather, it involves competition among lexical representations prior to the final selection stage. This phenomenon is theoretically consistent with models of speech production that emphasize the interaction between activation and lexical selection control. This study contributes to theoretical neurolinguistics by presenting an analysis based on natural speech data in the context of the Indonesian language. The findings enrich the understanding of lexical access mechanisms in spontaneous speech production and demonstrate that surface-level linguistic phenomena can serve as a basis for interpreting cognitive processes in language production. The novelty of this study lies in its examination of lexical access mechanisms based on spontaneous spoken data, positioning lexical stress as a prosodic indicator of the lexical selection stage—an aspect that has rarely been addressed in previous neurolinguistic studies, which are generally based on experimental tasks.*

**Keywords:** lexical access, lexical activation, lexical selection, theoretical neurolinguistic

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## Introduction

Language is a complex cognitive ability that involves coordination between the linguistic system and neurolinguistic mechanisms (Rohmatul, [2024](#)). One of the fundamental processes in speech production is lexical access, defined as the mental process through which speakers activate and select lexical representations from the mental lexicon before realizing them in spoken form (Interaksionis & Rosvita, [2025](#)). This process occurs rapidly and largely unconsciously; however, its traces can be observed in speech production phenomena such as pauses, repetitions, self-repairs, and lexical stress. Understanding the mechanisms of lexical access is crucial, as this process directly contributes to the fluency, accuracy, and clarity of native speakers' speech. Therefore, it is essential for explaining the dynamics of speech production in everyday communication as well as in applied linguistic studies (Dardjowidjojo, [2025](#)). However, most studies on lexical access remain dominated by experimental approaches conducted in laboratory settings. As a result, lexical access phenomena in spontaneous

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speech within natural communicative contexts have received relatively limited attention in linguistic research.

Theoretically, the mechanism of lexical access in speech production has been explained through several cognitive models that conceptualize speech production as a staged process, beginning with conceptualization, followed by lexical formulation, and culminating in articulation (Levelt et al., 1999). During the formulation stage, lexical representations are activated and selected based on their semantic and phonological appropriateness. Meanwhile, Gary S. Dell, through the spreading activation model, emphasizes that activation occurs in a parallel and competitive manner within the lexical network, thereby triggering phenomena such as speech errors, pauses, and self-repairs.

To illustrate this process more clearly, consider a speaker who intends to say “I bought a book.” At the conceptual level, the speaker activates the general idea of a past purchase involving an object. At the lexical level, several semantically related candidates such as book, magazine, or novel may be activated simultaneously. Due to competition among these candidates, the speaker may briefly hesitate (“I bought a... uh... book”) or even initially select an unintended word (“I bought a magazine uh, I mean, a book”). This observable hesitation and correction reflect the underlying competition and selection processes within lexical access.

From a neurolinguistic perspective, lexical access is understood as a cognitive process involving the activation and selection of lexical representations. Multiple lexical candidates are activated simultaneously before a single representation is selected for production in speech (Sirulhaq et al., 2023). A number of psycholinguistic studies have shown that this process operates in a parallel and competitive manner within the lexical network (Dell, 1986). Lexical activation occurs when several candidate words relevant to the speaker’s communicative intention are activated at once, while the selection process determines the lexical unit that best fits the semantic and pragmatic context of the utterance (Rahmadani, 2025). The interaction between these two processes reflects the dynamic and adaptive nature of the language system, in which speakers continuously adjust their lexical choices in accordance with communicative goals and the contextual demands of the utterance (Antonius, 2019).

Several previous studies have examined lexical access from psycholinguistic and neurolinguistic perspectives, particularly in Indo-European languages. These studies generally affirm that the activation of lexical representations occurs in parallel, while selection is competitive until a single representation is chosen for articulation (Runnqvist, 2023). However, many of these studies rely on laboratory-based experimental methods, such as picture-naming tasks or reaction time measurements, as employed by Levelt (1999), Gary S. Dell (1986), Jescheniak and Levelt (1994), and Schriefers (1990). Consequently, they do not fully capture the complexity of lexical access processes in natural speech. In addition, prior research by Levelt (1999), Dell (1986), Jescheniak and Levelt (1994), and Schriefers (1990) often focuses on activation and lexical selection as separate processes, without explicitly linking them to prosodic phenomena particularly lexical stress which can serve as an important indicator of ongoing cognitive processing (Anis et al., 2023).

These limitations highlight a research gap that needs to be addressed, especially in the context of the Indonesian language, which has received relatively limited attention in neurolinguistic studies (Runnqvist et al., 2019). To date, most research on lexical access mechanisms has focused on European languages, particularly English, Dutch, and German (Dell, 1986; Levelt, 1999; Jescheniak & Levelt, 1994;

Schriefers, 1990), as well as, in some cases, Spanish (Costa, 2004). Indonesian possesses distinct prosodic and structural characteristics compared to these languages, and thus has the potential to offer new insights into the dynamics of activation and selection of lexical representations in speech production. Examining lexical access in the natural speech of native Indonesian speakers is therefore essential for broadening the scope of neurolinguistic theory, which has thus far been largely dominated by experimental data and a limited set of languages (Farijanti et al., [2024](#)).

Based on the aforementioned background, this study aims to analyze the mechanisms of lexical access in native speakers of Indonesian, with a particular emphasis on the processes of activation and selection of lexical representations in spontaneous spoken discourse. Specifically, this study seeks to identify linguistic indicators that reflect the processes of lexical activation and selection such as pauses, repetitions, self-repairs, and lexical stress and to interpret these phenomena within a theoretical neurolinguistic framework.

## Method

This study does not involve direct measurement of brain activity, such as electroencephalography (EEG) or functional magnetic resonance imaging (fMRI). Therefore, the analysis focuses on linguistic indicators in spoken discourse as reflections of psycholinguistic processes involved in lexical access. The neurolinguistic perspective in this study is employed as a theoretical framework to interpret the dynamics of activation and selection of lexical representations, rather than as an empirical measurement of neurological activity.

The research data were obtained from informal conversations among university students in a campus setting. These conversations generally consisted of reflective discussions about academic experiences, including experiences in answering questions or taking examinations. Although the topics were related to academic activities, the interactions occurred spontaneously in everyday communicative situations; thus, the resulting utterances reflect natural speech production processes.

The neurolinguistic approach applied in this study is theoretical-interpretative, in which the processes of lexical activation and selection are interpreted based on surface-level linguistic markers in spontaneous spoken discourse (AuBuchon et al., [2022](#)). This study employs a descriptive qualitative method with a neurolinguistic approach. This method is used to systematically describe the mechanisms of lexical access, particularly the activation and selection of lexical representations, as reflected in the speech production of native speakers.

## Participants

This study does not involve direct measurement of brain activity, such as electroencephalography (EEG) or functional magnetic resonance imaging (fMRI). Therefore, the analysis focuses on linguistic indicators in spoken discourse as reflections of psycholinguistic processes involved in lexical access. The neurolinguistic perspective in this study is employed as a theoretical framework to interpret the dynamics of activation and selection of lexical representations, rather than as an empirical measurement of neurological activity.

## Instruments and Materials

The primary instrument in this study is the researcher, who plays a central role in both data collection and analysis. Supporting instruments include a digital audio recorder to capture participants' spontaneous speech, an observation guide to document linguistic phenomena such as pauses, repetitions, self-repairs, and verbal hesitations, a semi-structured interview guide to elicit participants' clarification regarding word selection and substitution processes, and field notes to record the situational context of speech as well as relevant nonverbal data. The research materials consist of spontaneous spoken utterances produced by participants in natural communicative situations, with conversation recordings ranging from 5 to 10 minutes in duration.

## Data Collection Procedures

The spontaneous conversations recorded in this study were partially related to students' academic experiences, such as discussions about exam questions or coursework. These topics emerged naturally during participant interactions and were not explicitly directed by the researcher.

Data collection was conducted through several stages: (1) observing the communicative context by examining participants' natural interactions in informal campus settings, and (2) recording spontaneous spoken discourse for approximately 5–10 minutes.

A follow-up interview was conducted after the recording session to obtain participants' explanations regarding pauses, repetitions, and self-repairs that occurred in their speech. In addition, field notes were taken to document linguistic phenomena that were not fully captured in the audio recordings, such as expressions of hesitation and prosodic emphasis. All procedures were applied consistently across participants to ensure the replicability of the study.

The data in this study consist of spontaneous spoken utterances produced by native Indonesian-speaking university students in natural communicative contexts. These utterances were not elicited through linguistic prompts or metalinguistic tasks; rather, they emerged naturally during communicative interactions. Participants were provided with general topics to initiate conversation without any specific instructions regarding language use, allowing the resulting utterances to reflect natural and unconsciously controlled language production processes. Therefore, the analyzed data represent everyday language use rather than participants' metalinguistic reflections on the language they produced.

## Data Analysis

In this study, linguistic indicators are operationally defined as follows: A pause is identified as a temporary in the flow of speech lasting approximately 0.5 seconds or longer in the audio recording. A repetition refers to the immediate recurrence of a word or phrase within a single utterance sequence. A self-repair is identified when the speaker replaces or corrects a word that has just been produced. Lexical stress is identified through prosodic emphasis on specific words, marked by increased intensity or changes in intonation patterns. The identification of these indicators was conducted through a coding process applied to the transcribed speech data. In this study, several linguistic indicators are used as markers of potential lexical access processes in speech production. These indicators include pauses, repetitions, self-repairs, and lexical stress, each identified based on specific operational criteria in the transcription.

## Pause

A pause is defined as a temporary in the flow of speech lasting approximately 0.5–1 second or longer, which may indicate the process of searching for or activating lexical representations in the speaker's linguistic memory (Gósy, [2023](#)).

## Repetition

Repetition refers to the consecutive re-articulation of the same word or phrase within a segment of speech. This phenomenon is interpreted as an indication of unstable activation or selection of lexical representations (Dorokhova, [2023](#)).

## Self-repair

Self-repair is identified when the speaker corrects or replaces a previously uttered word with another form considered more appropriate in the given context (Şahin et al., [2026](#)).

## Lexical Stress

Lexical stress is identified through prosodic emphasis on particular words, observable through intonation patterns in the audio recordings. Such emphasis often occurs when speakers are reinforcing or confirming their lexical choices during speech production. All speech data were first transcribed from the audio recordings. Following the transcription process, the researcher conducted manual coding by identifying the occurrence of linguistic indicators such as pauses, repetitions, self-repairs, and lexical stress in each segment of the utterances. Each linguistic phenomenon was then categorized according to the predefined indicator types established within the analytical framework of this study (Hartsuiker & Strijkers, [2023](#)).

## Results and Discussion

This study aims to explain the mechanisms of lexical access in native speakers of Indonesian by focusing on two main processes, namely the activation and selection of lexical representations. This perspective is in line with the view of Martin J. Pickering and Kristof (Hartsuiker & Strijkers, [2023](#)), who argue that “different linguistic components of a word meaning, syntax, and phonology—are accessed in parallel rather than sequentially.” This phenomenon is reflected in the spontaneous spoken utterances of students within natural communicative contexts.

Based on the data analysis, it was found that these two processes operate dynamically, overlap with one another, and can be identified through linguistic markers that emerge on the surface of utterances. The speech excerpts presented in Table 1 are drawn from students' reflective conversations discussing their experiences in answering questions or taking examinations. These utterances occurred spontaneously in informal discussions, thereby providing insight into the dynamics of lexical access processes in natural speech production.

**Table 1. Linguistic Indicators of Lexical Access Mechanisms**

Data Code	The Utterances	Underlying Lexical Access
D1	<i>“Ada satu soal yang aku baca terus mikir emm... ini maksudnya apa ya?”</i>	Activation of lexical representations (multiple

	(There was one question I read, then I kept thinking, uhm... what does it mean?)	possible meanings of the question are activated)
<b>D2</b>	<i>"Awalnya aku jawab cepat, (.....) terus berhenti sebentar."</i>  (At first I answered quickly, then I paused for a moment.)	Lexical activation (evaluation of answer candidates)
<b>D3</b>	<i>"Awalnya nulis satu opsi, terus aku hapus dan pilih yang lain."</i>  ("At first I wrote one option, then I deleted it and chose another.")	Lexical selection (competition among candidates)
<b>D4</b>	<i>"Aku sempat ragu juga, tapi akhirnya aku pertahanin jawaban awal."</i>  ("I hesitated for a moment, but in the end I kept my initial answer.")	Lexical selection (reinforcement of the selected representation)
<b>D5</b>	<i>"Aku nulis, terus baca ulang, terus mikir, kata ini kurang tepat."</i>  ("I wrote it, then reread it, then thought, this word is not quite right.")	Activation → lexical selection
<b>D6</b>	<i>"Akhirnya aku ganti."</i>  ("In the end, I changed it.")	Lexical selection
<b>D7</b>	<i>"Bukan nggak ngerti, tapi lagi nyari urutan jawabannya."</i>  ("It's not that I don't understand, I'm just looking for the order of the answer.")	Lexical activation (conceptual structuring)
<b>D8</b>	<i>"Begitu dapet satu kalimat awal, lanjutannya lebih gampang."</i>  ("Once I got the first sentence, the rest became easier.")	Lexical selection completed
<b>D9</b>	<i>"Tadi harusnya jawab yang mana ya?"</i>  ("Which one should I have answered earlier?")	Reactivation of lexical representation
<b>D10</b>	<i>"Aku coba berhenti mikirin jawabanku."</i>  ("I tried to stop thinking about my answer.")	Termination of lexical selection
<b>D11</b>	<i>"Tiap soal bikin mikir cepat, pilih jawaban, terus yakin atau ragu."</i>  ("Each question makes me think quickly, choose an answer, then feel either confident or doubtful.")	Parallel activation & competitive selection
<b>D12</b>	<i>"Aku biasanya perhatiin kata kuncinya, kalau udah dapet aku mantapin jawabannya."</i>	Lexical selection

	("I usually focus on the keywords, and once I find them, I confirm my answer.")	
<b>D13</b>	"Sekarang waktunya istirahat." (“Now it’s time to rest.”)	Utterance production after stable selection
<b>D14</b>	"Aku masih mikir kata yang kupakai." (“I’m still thinking about the word I should use.”)	Lexical activation
<b>D15</b>	"Kata itu kayak ngantri mau keluar." (“The words feel like they are lining up to come out.”)	Parallel activation of lexical representations
<b>D16</b>	"Mau bilang bingung, tapi lebih ke ragu." (“I want to say confused, but it’s more like doubtful.”)	Parallel activation & competitive selection
<b>D17</b>	"Mirip, tapi beda maknanya." (“They are similar, but have different meanings.”)	Activation → lexical selection
<b>D18</b>	"Aku sempat berhenti pas nulis." (“I paused while writing.”)	Lexical activation
<b>D19</b>	"Nyari kata yang paling pas." (“Looking for the most appropriate word.”)	Lexical selection
<b>D20</b>	"Awalnya mau nulis berpengaruh, tapi kuganti." (“At first I wanted to write ‘influential,’ but I changed it.”)	Lexical selection (competition among candidates)
<b>D21</b>	"Rasanya yang itu lebih cocok." (“It feels like that one is more suitable.”)	Lexical selection (reinforcement of the selected representation)
<b>D22</b>	"Kata pertama muncul cepat." (“The first word came quickly.”)	Activation of dominant lexical representation
<b>D23</b>	"Belum tentu yang paling tepat." (“It may not be the most accurate.”)	Activation → lexical selection
<b>D24</b>	"Lama mikir, tapi begitu dapet langsung lanjut." (“It took a while to think, but once I got it, I continued immediately.”)	Lexical selection completed
<b>D25</b>	"Kalimatnya kayak ngalir sendiri." (“The sentence just flows on its own.”)	Stable selected lexical representation
<b>D26</b>	"Otak kita kerja milih-milih kata." (“Our brain works by selecting words.”)	Parallel activation & competitive selection
<b>D27</b>	"Capek mikir kata." (“Tired of thinking about words.”)	Repeated lexical activation
<b>D28</b>	"Capek... eh, melelahkan."	Lexical selection

	("Tired... I mean, exhausting.")	
<b>D29</b>	"Nah, itu lebih pas."  ("Yes, that one is more appropriate.")	Termination of lexical selection

### Activation of Lexical Representations

The activation of lexical representations constitutes the initial stage in the mechanism of lexical access, during which speakers begin to activate a set of candidate words or meanings related to the concept they intend to convey. At this stage, the cognitive system has not yet determined a single lexical form; therefore, multiple possible lexical representations may emerge simultaneously within the speaker's mental lexicon. This phenomenon is typically marked by pauses, hesitation markers, repetitions of thought processes, and reflections of word-searching behavior in speech (Levelt et al., 1999).

Such indications can be observed in Data 1, where the respondent explains their cognitive process: "*Waktu baca soalnya, saya sempat berhenti sebentar karena masih mencoba memahami maksud pertanyaannya. Rasanya seperti masih mencari arti yang paling tepat dari kalimat itu.*" ("When I read the question, I paused for a moment because I was still trying to understand what it meant. It felt like I was searching for the most appropriate meaning of the sentence.") The presence of hesitation expressions such as "uhm..." indicates that the speaker had not immediately accessed the appropriate semantic representation after processing the linguistic stimulus. From a speech production perspective, this phenomenon reflects the stage of lexical activation, in which multiple candidate meanings or concepts are activated simultaneously within the mental lexicon (Roos et al., 2023). The excerpt demonstrates a cognitive pause occurring as the speaker attempts to interpret the meaning of the question, suggesting that several possible meanings are being activated before a linguistic decision is made.

A similar phenomenon is found in Data 2. The respondent states: "*Saat itu saya sudah punya gambaran apa yang ingin saya sampaikan, tapi saya masih mencari kata yang tepat. Makanya sempat muncul eh... atau jeda sebentar karena saya sedang mempertimbangkan kata yang paling sesuai.*" ("At that time, I already had an idea of what I wanted to say, but I was still searching for the right word. That's why I produced 'uh...' or paused briefly, because I was considering the most appropriate word.") This statement indicates an initial evaluation of candidate responses that have already been activated in the speaker's mind. In Willem J. M. Levelt's (1999) model of speech production, this condition reflects the process of lexical activation followed by internal monitoring of lexical choices.

In Data 5, the respondent describes a recursive thinking process prior to selecting a lexical item: "*Waktu itu saya sedang mencoba menyusun kalimat supaya maksud saya lebih jelas. Jadi saya mengulang bagian awalnya sambil berpikir bagaimana cara menyampaikan kalimat itu dengan lebih tepat.*" ("At that moment, I was trying to construct a sentence so that my intention would be clearer. So I repeated the beginning part while thinking about how to express it more precisely.") This utterance indicates that the speaker engages in multiple stages of evaluation before determining the most appropriate lexical form. The act of repeating and reconsidering lexical choices suggests that lexical activation does not always lead directly to final selection, but may involve iterative evaluative processes (Sirulhaq et al., 2023).

Symptoms of activation are also evident in Data 7, where the respondent explains: *“Saat itu saya sebenarnya sedang memikirkan bagaimana melanjutkan kalimat saya. Saya sudah punya ide di kepala, tapi saya masih mencari kata yang paling tepat untuk menyampaikannya, jadi saya berhenti sebentar.”* *“Bukan nggak ngerti, tapi lagi nyari urutan jawabannya.”* (“At that time, I was actually thinking about how to continue my sentence. I already had an idea in mind, but I was still searching for the most appropriate words to express it, so I paused for a moment... It’s not that I didn’t understand, I was just figuring out the sequence of my answer.”) This excerpt indicates that the speaker does not experience difficulty in understanding the linguistic stimulus, but rather is engaged in structuring the response systematically. The presence of metacognitive clarification serves as a linguistic indicator that the speaker is consciously reflecting on the cognitive processes occurring during speech production (Sá-Leite & Lago, 2024).

In Data 9, the respondent expresses a post-examination reflection. Data 9 reveals the presence of cognitive reflection following the response process, as illustrated in the following excerpt: *“Waktu itu saya sedang mencoba menyusun kalimat supaya lebih jelas. Jadi kata yang tadi sempat saya ulang sebenarnya bagian dari proses saya berpikir sebelum melanjutkan penjelasan.”* *“Tadi harusnya jawab yang mana ya?”* (“At that time, I was trying to construct my sentence more clearly. So the word that I repeated earlier was actually part of my thinking process before continuing the explanation... Which answer should I have chosen earlier?”). This excerpt indicates that the speaker engages in a re-evaluation of the response that had previously been selected. The linguistic indicator in the form of a post-task reflective question suggests that cognitive processes related to lexical access continue even after the primary speech production has been completed (Hidayah & Mahliatussikah, 2024). From a neurolinguistic perspective on speech production, this phenomenon is associated with the reactivation of lexical representations. According to Willem J. M. Levelt et al. (1999), the language production system includes an internal monitoring mechanism that allows speakers to evaluate their own utterances even after production has occurred.

Evidence of parallel activation is observed in Data 11, where the respondent describes a rapid decision-making process during task performance: *“Iya, waktu itu saya sudah mulai mengucapkan kalimatnya, tapi saya masih berpikir apakah kata yang saya gunakan sudah tepat atau belum. Jadi sempat muncul keraguan sebelum saya melanjutkan.”* *“Tiap soal bikin mikir cepat, pilih jawaban, terus kadang yakin, kadang ragu juga.”* (“Yes, at that time I had already started saying the sentence, but I was still thinking whether the word I used was appropriate or not. So there was a moment of hesitation before I continued... Each question required me to think quickly, choose an answer, and sometimes feel confident, sometimes doubtful.”)

This utterance reflects a sequence of rapid cognitive processes, involving the activation of multiple possible lexical representations followed by selection. Linguistic indicators such as “thinking quickly,” “choosing an answer,” and “feeling confident or doubtful” point to a dynamic competition among candidate responses before a final decision is made. This suggests that multiple lexical candidates can be activated simultaneously within the speaker’s cognitive system before one is ultimately selected (Cahya, A. D., Gustianingsih, & Sembiring, 2025).

A more explicit reflection of word-search processes is evident in Data 14: *Kadang saya tahu apa yang ingin saya sampaikan, tapi saya masih memikirkan kata apa yang paling tepat untuk dipakai.* (“Sometimes I know what I want to say, but I am still thinking about which word is the most appropriate to use.”) This statement directly illustrates the activation of lexical representations prior to selection. The data indicate that language production does not always proceed automatically, but may involve

conscious cognitive reflection as the speaker attempts to identify the most appropriate lexical representation.

An interesting cognitive experience is also observed in Data 15, where the respondent describes the process metaphorically: *“Rasanya seperti ada beberapa kata yang muncul di kepala, tapi saya harus menunggu mana yang paling cocok untuk dipakai.”* ( “It feels like several words appear in my mind, but I have to wait to see which one fits best.”) This metaphor illustrates the parallel activation of multiple lexical candidates within the mental lexicon. In theories of speech production, this phenomenon aligns with the concept of parallel activation in lexical access models, as proposed by Gary S. Dell (1986). According to this model, multiple lexical candidates can be activated simultaneously within the lexical network, and the candidate with the highest level of activation is selected for production (Irham et al., 2023). A similar indication appears in Data 16: *“Saya sempat mempertimbangkan dua kata yang hampir sama maknanya, jadi saya berpikir sebentar untuk menentukan mana yang lebih sesuai.”* ( “I briefly considered two words with nearly similar meanings, so I paused for a moment to decide which one was more appropriate.” )This excerpt demonstrates that semantically related lexical candidates may be activated simultaneously before the selection process takes place.

The same pattern is observed in Data 17, where the respondent states: *“Ada beberapa kata yang menurut saya mirip, tapi setelah dipikir lagi ternyata maknanya tidak persis sama”* (There are several words that seem similar to me, but after thinking about it, their meanings are not exactly the same). This statement reflects a semantic evaluation of multiple activated lexical candidates. Within the framework of speech production theory, this stage corresponds to semantic monitoring, namely the process by which speakers evaluate the semantic appropriateness of lexical items before final selection. This evaluation process ensures that the selected word aligns with the intended concept to be conveyed (Levelt, 1999). The lexical network model proposed by Gary S. Dell (1986) explains that words with semantic relationships activate one another within the mental lexicon. This activation enables speakers to compare multiple lexical candidates before determining the most appropriate choice. Thus, Data 17 demonstrates that lexical selection involves not only activation but also semantic evaluation to ensure accuracy of meaning in speech production.

In Data 18, the respondent reports a pause during writing: *“Saat menulis jawaban, saya sempat berhenti sebentar karena merasa perlu memikirkan lagi kata yang ingin saya gunakan”* (While writing the answer, I paused for a moment because I felt the need to reconsider the word I wanted to use). This pause indicates that the speaker is searching for lexical representations within memory. In contrast, Data 22 shows that in certain situations, words may emerge rapidly in the speaker’s mind: *“Kata pertama muncul cepat di kepala”* (The first word came quickly to mind). This excerpt suggests that particular lexical representations can be accessed relatively automatically, without an extended search process. The linguistic indicator “came quickly” reflects a high level of activation within the respondent’s mental lexicon, likely due to strong semantic associations with the context (Sholikhah & Hariri, 2025)

However, the initial emergence of a word does not necessarily mean that it is immediately selected. This is evident in Data 23: *“Walaupun kata itu langsung terlintas di pikiran saya, saya tetap mempertimbangkan apakah itu benar-benar kata yang paling tepat.”* ( “Even though the word came to mind immediately, I still considered whether it was truly the most appropriate one.”) This statement indicates that after activation occurs, evaluative processes over lexical candidates continue. In Willem J. M. Levelt’s (1989) model of speech production, this stage is associated with monitoring, namely the

internal evaluation of activated lexical items prior to production. Monitoring allows speakers to assess whether the selected lexical representation aligns with their intended meaning. This process also relates to the mechanism of competition among lexical candidates in Dell's (1986) model, in which an initially activated candidate may be replaced by another that is deemed more appropriate following semantic evaluation.

In Data 26, the respondent explicitly recognizes this mental process: *"Rasanya seperti otak sedang memilih-milih kata yang paling cocok untuk digunakan"* (It feels like my brain is selecting the most suitable words to use). This metacognitive reflection indicates the speaker's awareness of the activation of multiple lexical candidates (Danil et al., 2023). From a neurolinguistic perspective, this phenomenon reflects the mechanism of parallel activation, in which several lexical representations are activated simultaneously within the lexical network prior to selection (Dell, 1986). Thus, Data 26 provides insight into how speakers intuitively perceive the lexical competition occurring in their cognitive system.

Finally, Data 27 reveals the cognitive load involved in this process: *"Iya, ada dua atau tiga kata yang sempat muncul di pikiran saya, lalu saya mencoba memilih yang paling sesuai dengan maksud yang ingin saya sampaikan"* (Yes, there were two or three words that came to mind, and then I tried to choose the one that best matched what I wanted to say). This statement illustrates that repeated activation of lexical representations may increase cognitive load for the speaker. In neurolinguistic research, this phenomenon is associated with increased activity in the working memory system during lexical retrieval (Hanulovà et al., 2011). When multiple lexical candidates are activated simultaneously, the cognitive system must maintain and evaluate these representations before final selection is achieved.

Overall, these data indicate that the stage of lexical activation in speech production is characterized by pauses, hesitation, reflective word-search processes, and the simultaneous emergence of multiple lexical candidates. These findings are consistent with neurolinguistic models of speech production, which propose that before a word is selected as the final utterance form, the speaker's mental system first activates multiple possible lexical representations within the lexical network.

### Selection of Lexical Representations

The selection of lexical representations constitutes a subsequent stage in the mechanism of lexical access, following the activation of multiple candidate words or meanings within the speaker's mental lexicon. At this stage, the cognitive system evaluates the available candidates and ultimately selects a single lexical representation that is considered most appropriate for the utterance context. This process is often marked by self-repairs, word substitutions, reinforcement of choices, and final decisions regarding specific lexical forms (Budiwiyanto & Suhardijanto, 2020b).

Evidence of the selection process can be observed in Data 3, where the respondent explains: *"Iya, waktu itu saya merasa kata yang pertama saya ucapkan kurang tepat untuk menjelaskan maksud saya. Jadi saya langsung memperbaiki dan menggantinya dengan kata lain yang menurut saya lebih jelas. Misal kata "opsi/pilihan"* (Yes, at that time I felt that the first word I used was not quite appropriate to explain my intention. So I immediately corrected it and replaced it with another word that I thought was clearer, for example 'option/choice'). This utterance indicates that the speaker initially selected one lexical candidate but subsequently replaced it with another deemed more appropriate. From a neurolinguistic perspective on speech production, this phenomenon reflects the stage of lexical

selection, in which the language system chooses one representation from several previously activated candidates (Diwansyah et al., [2025](#)).

The selection process is also evident in Data 4, where the respondent states: *“Saya sebenarnya sudah tahu apa yang ingin saya sampaikan, tapi di pikiran saya ada beberapa pilihan kata. Jadi saya berhenti sebentar untuk menentukan kata mana yang paling sesuai sebelum melanjutkan pembicaraan”* (I actually already knew what I wanted to say, but I had several word choices in mind. So I paused for a moment to decide which word was most appropriate before continuing). This illustrates that the speaker experienced temporary uncertainty in selecting a lexical representation but ultimately maintained the initial choice. In the context of lexical access, this suggests that selection does not always result in word replacement; it may also lead to the reinforcement of a previously selected representation (Pickering & Strijkers, [2025](#)).

In Data 6, the respondent describes the final decision in word selection: *“Waktu itu saya sudah mulai berbicara, tapi setelah kata itu keluar saya merasa kurang tepat dengan maksud yang ingin saya sampaikan. Jadi saya langsung menggantinya dengan kata lain yang menurut saya lebih sesuai. Mau pakai kata ganti/pakai”* (At that time I had already started speaking, but after the word came out, I felt it did not match what I intended to convey. So I immediately replaced it with another word that I thought was more appropriate). Although brief, this utterance reflects the final stage of lexical selection. The linguistic indicator here is the act of replacing a word, suggesting that the speaker had evaluated multiple candidates before determining the most suitable one. In Willem J. M. Levelt’s ([1999](#)) model of speech production, this phenomenon corresponds to the stage of lemma selection, in which one lexical representation is selected from a set of activated candidates. The activation of multiple lexical candidates often results in competition within the lexical network before the system settles on a final representation (Ries et al., [2016](#)).

A completed selection process is also evident in Data 8. The respondent states: *“Begitu saya menemukan kalimat awal yang tepat, bagian selanjutnya terasa lebih mudah untuk dilanjutkan missal kata “Gampang/Mudah”* (Once I found the right opening sentence, the rest became easier to continue for example, using ‘easy/simple’). This indicates that once a lexical representation or sentence structure has been successfully selected, speech production proceeds more fluently. The shift from hesitation to fluency serves as a linguistic indicator that the selection process has reached a stable stage. This condition can be understood as the result of the language system successfully selecting a lemma that aligns with the intended conceptual message. Once the primary lemma is selected, subsequent formulation processes such as syntactic structuring and lexical slot filling can proceed more efficiently (Nenoliu et al., [2024](#)).

In Data 10, the respondent notes: *“Saat itu saya mempertimbangkan beberapa kata yang ada di pikiran saya. Saya memilih kata yang menurut saya paling sesuai dengan konteks pembicaraan supaya orang lain bisa memahami maksud saya.”**Aku coba berhenti mikirin jawabanku”* (At that time, I considered several words in my mind. I chose the one that best fit the context so that others could understand me... I tried to stop overthinking my answer). The linguistic indicator here reflects the closure of the evaluative process, suggesting that the speaker consciously terminates further reflection on the selected response. In terms of lexical access, this condition relates to the termination of lexical selection, where the production system ceases further activation or evaluation of alternative candidates (Nozari, [2025](#)).

Evidence of selection is also found in Data 12, where the respondent explains: *“Saya sengaja menekankan kata “Kuncinya” karena menurut saya itu bagian yang paling penting dari kalimat yang*

*saya sampaikan. Jadi saya ingin memastikan orang lain menangkap maksudnya dengan jelas*” (I deliberately emphasized the word ‘key’ because I thought it was the most important part of my sentence. I wanted to make sure others clearly understood my point). This utterance demonstrates a cognitive strategy in lexical access, where the speaker explicitly identifies a key lexical item as the focal point for meaning construction. Linguistic indicators such as emphasis and reinforcement reflect that once a semantic representation is deemed relevant, the speaker strengthens that choice. This stage can be understood as the reinforcement of a selected lexical representation, where one candidate gains a higher activation level than others and is ultimately chosen for production (Muliana et al., 2025).

In Data 13, the respondent states: *“Saat itu saya merasa kalimat yang saya ucapkan tadi belum terlalu jelas. Jadi saya mencoba memperbaikinya supaya maksud yang ingin saya sampaikan bisa lebih mudah dipahami. “Sekarang waktunya istirahat”* (At that time I felt that my previous sentence was not clear enough, so I tried to improve it so that my intention would be easier to understand... Now it’s time to take a break). Unlike earlier data that show hesitation or lexical searching, this utterance is produced fluently without signs of cognitive hesitation. This suggests that the lexical selection process has been completed and the speech production system has reached a stable state.

Lexical selection is further illustrated in Data 19, where the respondent remarks: *lya, saya mencoba mencari kata yang paling pas supaya orang lain bisa memahami maksud saya dengan lebih jelas. “Nyari kata yang paling pas”* (Yes, I tried to find the most appropriate word so that others could understand my meaning more clearly... searching for the most suitable word). This utterance directly reflects a conscious lexical search process. The speaker recognizes the presence of multiple lexical alternatives and actively seeks the most appropriate form.

In Willem J. M. Levelt (1989)’s model of speech production, this process corresponds to the stage of lemma selection, where speakers choose the lexical representation that best matches the intended concept. Gary S. Dell (1986) explains that during this process, multiple lexical candidates may be activated simultaneously within the lexical network. Speakers then evaluate these candidates based on semantic and contextual appropriateness before making a final decision. These data indicate that lexical access may involve metacognitive awareness of the ongoing word-search process (Muhayyag & Sakkir, 2025).

A clearer illustration can be observed in Data 20, where the respondent explains: *“Awalnya saya ingin menggunakan satu kata, tapi setelah saya pikir lagi rasanya kurang tepat, jadi saya menggantinya dengan kata lain yang menurut saya lebih sesuai. “Awalnya mau nulis berpengaruh, tapi kuganti”* (Initially, I wanted to use one word, but after reconsidering, it did not feel quite appropriate, so I replaced it with another word that I thought was more suitable... At first I wanted to write ‘influential,’ but I changed it). This utterance indicates a word substitution following a process of lexical evaluation. The linguistic indicator, reflected in the phrase “initially... but I changed it,” suggests that the first activated lexical representation was not immediately selected as the final form.

Within models of lexical access, this phenomenon reflects competition among lexical candidates, in which an initial candidate is replaced by another considered more appropriate, as proposed by Gary S. Dell (1986). According to Willem J. M. Levelt (1999), lexical selection does not always produce an immediately stable outcome. Speakers may revise their choices when a previously selected candidate is deemed less appropriate after semantic evaluation. Thus, Data 20 demonstrates that language production is dynamic and allows for lexical revision prior to the final utterance or written form.

In Data 21, the respondent states: *“Iya, waktu itu ada beberapa kata yang muncul di pikiran saya hampir bersamaan. Saya sempat memikirkan mana yang paling cocok untuk menyampaikan maksud saya sebelum akhirnya memilih salah satunya”* (Yes, at that time several words came to mind almost simultaneously. I considered which one was the most suitable to express my intention before finally choosing one). This excerpt indicates that the respondent has reached the stage of reinforcing the selected lexical representation. The linguistic indicator “most suitable” reflects semantic evaluation of multiple candidates prior to the final decision. In speech production models, this stage corresponds to lexical selection, in which one representation is chosen from several previously activated candidates. When one candidate reaches the highest level of activation, it becomes the selected form for production (Nozari & Hepner, 2019)

The effect of successful selection on speech fluency is evident in Data 24. The respondent describes a shift from hesitation to smoother production: *“Saya berhenti sebentar karena mencoba mengingat kata yang ingin saya gunakan. Saya merasa kata itu sudah ada di pikiran saya, tapi perlu sedikit waktu untuk menemukannya”* (I paused for a moment because I was trying to recall the word I wanted to use. I felt that the word was already in my mind, but I needed a little time to retrieve it). This excerpt shows a word-search phase followed by increased fluency once the appropriate word is retrieved. Linguistic indicators such as “thinking for a while” and “continuing immediately” reflect the transition from the activation phase to a more stable production phase. From a neurolinguistic perspective, this phenomenon reflects the completion of lexical selection. Once a lexical representation is selected as the primary candidate, speech production proceeds more smoothly without further lexical search (Broos et al., 2019).

A similar pattern appears in Data 25, where the respondent describes a condition of fluent language production: *“Biasanya setelah saya menemukan kata yang menurut saya paling cocok, saya langsung melanjutkan kalimat saya dengan lebih yakin”* (Usually, once I find the word that I think is most appropriate, I continue my sentence more confidently). The linguistic indicator “it just flows” suggests that speech production occurs relatively automatically without significant cognitive pauses. In Levelt’s (1989) model of speech production, this condition arises when lexical selection and phonological encoding have been completed, allowing articulation to proceed automatically. This phenomenon is also consistent with the theory of automaticity in language production, which posits that stabilized lexical representations can be produced fluently without requiring further evaluation (Dell, 1986).

Spontaneous correction is also observed in Data 28, where the respondent explains: *“Saya sempat menyebut kata ‘capek’, lalu langsung menggantinya dengan kata ‘melelahkan’ karena terasa lebih tepat”* (I initially said ‘tired,’ then immediately replaced it with ‘exhausting’ because it felt more appropriate). This reflects a self-repair process in speech production, namely the spontaneous correction of lexical choice. Finally, Data 29 represents the finalization stage of lexical selection: *“After finding a more suitable word, I felt that it truly represented what I wanted to convey.”* This statement indicates that the selection process has reached termination, where the speaker perceives the chosen lexical representation as fully appropriate.

Overall, these data demonstrate that the stage of lexical selection is characterized by self-repair, word substitution, reinforcement of choices, and final decisions regarding specific lexical forms. These findings support neurolinguistic models of speech production, which propose that after multiple lexical candidates are activated, the speaker’s cognitive system engages in competition and evaluation processes until a single lexical representation is selected as the final form of the utterance.

## Conclusion

Based on the research objectives and problem formulation, it can be concluded that the mechanism of lexical access in native speakers of Indonesian does not occur in a linear manner, but rather through two main interrelated processes: the activation and selection of lexical representations. The activation process occurs when speakers begin planning their utterances and is marked by the occurrence of pauses, repetitions, sound prolongations, and verbal hesitations, as observed in Data D1–D29. These linguistic indicators suggest that multiple lexical candidates relevant to the intended meaning are activated simultaneously within the speaker's mental lexicon, particularly when the speaker is engaged in semantic processing and utterance planning.

Concurrently, the process of lexical selection overlaps with activation and is reflected in phenomena such as self-repairs, word substitutions, and emphasis on specific lexical units. The findings indicate that selection is not solely based on semantic appropriateness, but also on speech fluency and communicative goals. Thus, selection functions as a filtering mechanism that guides speakers toward the most optimal lexical choice among the activated candidates.

These findings demonstrate that activation and selection operate simultaneously and interactively in shaping native speakers' utterances. Activation provides a range of lexical possibilities, while selection ensures that the chosen words align with semantic, syntactic, and pragmatic contexts. Therefore, lexical access can be understood as a dynamic and adaptive cognitive process influenced by linguistic, cognitive, and situational factors in natural communication.

The implications of this study suggest that surface-level linguistic indicators such as pauses, repetitions, hesitations, and self-repairs can serve as an empirical basis for interpreting lexical access mechanisms in neurolinguistic and psycholinguistic research. This study highlights that natural language production can be effectively analyzed through spontaneous speech data without relying exclusively on laboratory-based neurophysiological measurements, while also contributing to the enrichment of neurolinguistic studies in the Indonesian language through empirical evidence derived from authentic communicative contexts.

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