

An Analysis of Phonological, Morphological, and Semantic Development in a Five-Year-Old Child's Spoken Language

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ABSTRACT

This study aims to analyze early childhood language development through three linguistic aspects: phonology, morphology, and semantics. The data was collected from the utterances of a young child during natural interactions. A descriptive qualitative method was used, focusing on observation and documentation of spontaneous speech. The findings reveal that children at an early age undergo various phonological simplifications, morphological constructions, and semantic categorization based on their everyday experiences. Phonological errors such as sound substitution and reduction were frequently observed. Morphological patterns such as reduplication and affixation show an early awareness of word formation. In the semantic domain, the child demonstrated understanding of categories such as objects, people, and actions. This study highlights the natural progression of linguistic abilities in children, emphasizing the developmental patterns in acquiring language.

Keywords: *Child language acquisition, Phonological development, Morphological development, Semantic development, Early childhood, Linguistic analysis*

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INTRODUCTION

Language acquisition is a fundamental aspect of human development, enabling individuals to communicate, think, and engage socially. From an early age, children acquire the ability to understand and produce language through a gradual and structured process. This process involves multiple linguistic components, including phonology (the sound system), morphology (word formation), and semantics (meaning). Understanding how these elements emerge and develop provides valuable insight into the cognitive and linguistic capacities of young learners.

Phonological development refers to the ability of children to perceive, differentiate, and produce the phonemes of their native language. Children often go through systematic stages of simplification before mastering adult-like speech (Ingram, 1989; Stampe, 1979). For example, they may substitute complex sounds with simpler ones or omit syllables altogether. These processes reflect not deficits, but natural developmental strategies.

In parallel, morphological development reflects a child's growing understanding of how words are constructed. Through exposure and experimentation, children begin using inflection, affixation, and compounding to create meaning (Clark, 2009; Brown, 1973). Reduplication and the combination of morphemes are often observed in early speech, signaling morphological awareness even before formal literacy.

Semantically, children begin by associating words with concrete objects and actions, gradually expanding their lexicon and conceptual categories. As they grow, their ability to express abstract meanings, relationships, and preferences develops in tandem with cognitive growth (Clark, 2003). This includes the categorization of experiences such as time, location, social roles, and emotions.

This study aims to explore the phonological, morphological, and semantic development of a five-year-old child through naturalistic observation. By examining spontaneous utterances in real-life contexts, this research seeks to uncover how children internalize and apply linguistic rules across multiple domains. The findings are expected to contribute to the broader understanding of child language development and the interdependence between language form and meaning.

METHOD

This section outlines the methodological approach used in the study, including the data source, data collection, and data analysis. A qualitative descriptive method was employed to explore the early language development of a five-year-old child through naturalistic observation. The focus was on analyzing spontaneous spoken language within a real-life home environment, using developmental linguistics frameworks as the basis for analysis.

1. Data Source

This study applied a qualitative descriptive approach to explore early language acquisition in a five-year-old child named Narendra. The research focused on spontaneous language use observed in a natural home environment. The child, referred to by a pseudonym, is a native speaker of Indonesian with limited English exposure. He was selected as the sole participant to allow for in-depth observation and analysis. Parental consent was obtained prior to the study, and ethical considerations were upheld throughout the observation process.

2. Data Collection

Data were collected through naturalistic observation during three consecutive days of Narendra's daily life at home. The researcher used audio recordings as the primary instrument to capture the child's spontaneous speech during casual conversations and play activities. This non-interventionist method ensured that the linguistic data collected reflected authentic and unprompted language use. A total of 25 utterances were selected for analysis. These were transcribed verbatim to preserve phonological, morphological, and semantic details.

3. Data Analysis

The transcribed utterances were analyzed using a three-level linguistic coding framework based on developmental linguistics models from Clark (2009) and Brown (1973). The analysis covered phonological, morphological, and semantic aspects of language use.

1. **Phonological Analysis:** Utterances were examined for sound patterns such as substitution, simplification, assimilation, deletion, and reduplication, and were assessed based on age-appropriate developmental norms.
2. **Morphological Analysis:** Words were coded for root forms, affixation, reduplication, and truncation, focusing on how Narendra manipulated word forms to convey meaning.
3. **Semantic Analysis:** The child's utterances were evaluated for vocabulary use, meaning organization, and thematic relevance to assess his ability to express ideas and relationships through language.

Patterns and developmental strategies were identified to understand how Narendra formed and interpreted language in a naturalistic context.

FINDINGS AND DISCUSSION

1. Phonological

Language acquisition in children involves gradually mastering their language's sound system (phonology). This progression reflects the growth of linguistic and articulatory competence in children. Phonology is a branch of linguistics that studies the sound system of a language, including how sounds are organized and used. The basic unit of analysis in phonology is the phoneme, the smallest sound unit that can distinguish meaning. Children's phonological learning involves their ability to distinguish and produce these sounds correctly and mastering the rules of sound combination. This process often involves phonological simplification in the early stages, which develops into more accurate production.

In the context of language acquisition, children's mastery of phonology is a complex and gradual process. Theories of phonological acquisition explain that children often go through stages of simplification in their sound production before achieving full mastery. Clark (2003) observed phonological phenomena that often accompany the speech production of young children, indicating a dynamic interaction between phonological and morphological development. Children may adjust their articulation to align sound production with the desired word form.

A common phenomenon in children is phoneme substitution, which replaces one sound with another that is easier to pronounce, and phoneme reduction, which is the omission of a sound or syllable. This simplification process is a normal part of phonological development, in which children attempt to communicate even though their articulation skills are not yet perfect. As they grow older and are exposed to language, children gradually reduce their use of these simplification strategies, and their sound production becomes more accurate by adult language standards.

No	The aspects discovered	The data	Some analysis
1	Phoneme substitution	“sobeli” (stroberi)	The child replaces the complex consonant ‘tr’ with ‘b’, and the final vowel remains unchanged – a process of phonological simplification.
2.	Phoneme substitution	“bilu” (biru)	The change from ‘r’ to ‘l’ is common in the phonological development stage of children.
3	Phoneme substitution	“motol-motolan” (motor-motoran)	The mispronunciation of ‘r’ as ‘l’ is still common at age 5.
4	Phoneme substitution	“lobot-lobotan” (robot-robotan)	The shift of the initial phoneme ‘r’ to ‘l’ and the re-pronunciation indicate difficulty in articulating phonemes.
5	Phoneme substitution	“lemot” (remot)	The child pronounces ‘r’ as ‘l’, indicating substitution of the initial phoneme of the word.
6	Phoneme reduction	“layan” (rayan)	Elimination of the /r/ sound at the beginning of a syllable.
7	Simplification	“pelosotan” (perosotan)	The loss of the initial consonant /s/ indicates elision and simplification of articulation.
8	Difficult Consonants to Replace	“ama” (sama)	The loss of the initial consonant /s/ indicates elision and simplification of articulation.
9	Informal pronunciation	“tetei nai”	Non-standard pronunciations, but understood in a family context, including regional variations.

10	Elisi	“main lompat tangan”	There are no conjunctions or complete grammatical structures, simplifying pronunciation.
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The phonological data collected provide a clear picture of the characteristics of sound production in 5-year-old children. Several prominent aspects are various forms of phoneme substitution. For instance, in the word "stroberi," pronounced as "sobeli," the child replaces the complex consonant cluster 'tr' with 'b,' indicating a process of phonological simplification. The substitution of the phoneme 'r' with 'l' is common in the phonological development stage of children, as seen in the data "bilu" (biru), "motol-motolan" (motor-motoran), "lobot-lobotan" (robot-robotan), and "lemot" (remot). This indicates difficulty articulating the phoneme 'r,' which is often one of the last sounds children master. In the case of "lobot-lobotan," the shift of the initial phoneme 'r' to 'l' and the re-pronunciation also confirm the difficulty in articulating phonemes.

In addition to substitution, the data also shows phoneme reduction and articulatory simplification phenomena. For example, in "layan" (Rayan), the /r/ sound is eliminated at the beginning of a syllable. Similarly, "pelosotan" (perosotan) demonstrates the loss of initial syllable consonants, a common phenomenon in young children. Losing the initial consonant /s/ in "ama" (sama) indicates elision and simplification of articulation. The data also includes "tete nai" as an example of informal pronunciation, which, although non-standard, is understood in a family context, including regional variations. Lastly, the example "main lompat tangan" shows elision, resulting in the absence of conjunctions or complete grammatical structures, simplifying pronunciation overall. Overall, this data is consistent with the general patterns of phonological development in early childhood, where children simplify complex sounds until their articulatory abilities mature.

2. Morphological

Language acquisition in children is a complex process. They gradually master various aspects of language, including morphology. This progression reflects their growth in grammatical and cognitive competence.

Morphology is a branch of linguistics that studies the internal structure of words, how words are formed, and the relationships between words in a language. The basic unit of analysis in morphology is the morpheme, defined as the smallest meaningful unit. Morphemes can be categorized into free morphemes, which are words that can stand alone (e.g., "house," "go"), and bound morphemes, which cannot stand alone and must attach to other morphemes to form meaning (e.g., the prefix "me-," the suffix "-kan"). Children's learning of morphology involves understanding and applying these rules to form new words, changing word forms according to grammatical context, and understanding the meaning of complex words.

In language acquisition, morphology development in children has been the subject of extensive research. Various theories have been proposed to explain how children master complex morphological systems. Nilsen and Fox (2020) highlight that children use rhythmic patterns or familiar structures as "templates" for constructing new words. Although their productions may not fully align with adult language targets, they are still guided by generalized rules. This indicates that children are not merely imitating but actively processing and applying morphological principles. Peter (2024) adds that morphological development in young children is largely based on general rules, although their application may not yet be

perfect. For example, in the utterance "Im em no wit" for "I am not white," the child retains the diphthong in the base word but omits the final consonant, demonstrating an understanding of the basic rule despite inaccuracies in its implementation.

No	The aspects discovered	The data	Some analysis
1	Reduplication + affixation	"motol-motolan"	The use of the suffix-an and reduplication is a strategy children use to create toy forms from root words.
2	Reduplication + affixation	"lobot-lobotan"	Same as before, with the addition of phonological phenomena.
3	Nominal composition	"mobil lemot"	The child combines two nouns into a noun phrase (mobil + remot).
4	Verb + noun	"main pelosotan, ayunan"	The combination of verbs and toys shows that morphological structures have already been formed.
5	Prefixation (locative)	"disekolah"	The prefix "di-" is used to indicate place, even though the spelling/spacing is not yet correct.

The morphological data collected in the table provide valuable insights into how 5-year-olds construct and understand words. From the table provided, several morphological strategies used by children can be seen. Reduplication and affixation, as in "motol-motolan" and "lobot-lobotan," are common strategies that children use to form nouns referring to toys from root words. Particularly in "lobot-lobotan," the presence of phonological phenomena alongside the use of reduplication and affixation suggests that there is an interaction between phonological and morphological development, where children adjust sound production while applying the rules of word formation. Furthermore, the data shows the presence of noun composition, such as "mobil lemot". This indicates the child's ability to combine two nouns into one noun phrase, reflecting an understanding of word categories and the ability to form more complex constructions.

The combination of verbs and nouns, as in "main pelosotan, ayunan," further confirms that morphological structures have been formed in children. Children's ability to combine morphemes from different word categories shows early mastery of grammar. Finally, the use of locative prefixes, such as "disekolah," although the writing is not yet precise, shows that children already understand the function of the prefix "di-" to indicate place. Inaccuracies in writing or spacing can be explained by the fact that young children may not have fully mastered the conventions of formal orthography. Still, linguistically, they already understand the function of these morphemes. Overall, these data are consistent with theories of morphological acquisition, suggesting that children actively construct their language system by applying morphological rules that they understand, although perhaps with some imperfections.

3. Semantic

Children's language acquisition involves a gradual progression in the acquisition of the meaning system (semantics) of their language. This progression reflects the growth of cognitive and linguistic understanding in children.

Semantics is a branch of linguistics that studies meaning in language. It explores how words, phrases, and sentences convey meaning. For children, mastering semantics means learning what individual words mean, how words combine to create meaning, and how context affects interpretation. This process enables children to understand and use language to convey intent, categorize objects, and express concepts.

Semantic acquisition theory highlights that children's understanding of meaning develops through interaction with their environment and social experiences. Clark (2003) emphasizes that children acquire meaning by relating words to objects, actions, and events in their world, a process that is often guided by various lexical principles. For example, children tend to assume that a new word refers to a whole object rather than just a part of it (whole object assumption) or that a new word refers to a category of objects rather than a specific object (taxonomic assumption).

This acquisition of meaning is not just about memorizing words but about forming conceptual categories and understanding relationships between concepts. Children learn to group items based on similar characteristics (e.g., all four-legged animals are initially "dogs," then differentiated into specific types of animals), understand spatial and temporal relationships, and attribute characteristics to objects or entities. Their semantic development is closely linked to their cognitive development, allowing them to organize their knowledge of the world and express it through language. As their cognitive abilities mature, their semantic understanding becomes more nuanced, allowing them to understand more abstract concepts and complex relationships.

No	The aspects discovered	The data	Some analysis
1	Understanding time	“bangun jam 2” lalu di Ganti “jam 11”	Shows immaturity in the concept of the right time (2 o'clock is considered morning).
2	Understanding of place	“sekolah di TK Inayah”	The child can name the place and type of school, demonstrating an understanding of location semantics.
3	Social relations	“sama teteh sela, teteh nai”	The child understands family relationships and can name who accompanies them.
4	mentioning friends	“vito, tama, alpian, layan, lejo”	Able to name several people and categorize them as friends.
5	Activities		Explaining specific types of games demonstrates an understanding of the activity.

		“main lompat tangan, pelosotan, ayunan	
6	Favorite toys	“mobil lemot, motol- motolan, lobot-lobotan”	Clarification of objects based on their function as toys.
7	Favorite foods	“ikan, ayam”	Can choose and name favorite foods, demonstrating semantic preferences.
8	Vegetables	“brokoli, sayur asem, jagung”	Pengelompokan makanan berdasarkan jenis sayur, menunjukkan pemahaman kategori.
9	Color	“bilu ama ijo”	Grouping and identifying the colors of clothes demonstrates an understanding of color concepts.
10	Favorite animals	“kucing, anjing” “bisa dinaikin”	It shows not only familiarity with animals but also the ability to attribute characteristics to them.

The semantic data collected provides valuable insights into how 5-year-old children understand and categorize the world through language. The table indicates varying levels of semantic understanding across different concepts. For instance, the child shows immaturity in the concept of the right time, exemplified by considering "2 o'clock" as morning, which they later changed to "11 o'clock". This suggests that while they grasp the numerical aspect, their conceptualization of specific periods might still be developing. In contrast, the child demonstrates a robust understanding of place, as evidenced by their ability to name the place and type of school, "TK Inayah," demonstrating an understanding of location semantics. Furthermore, the child's understanding of social relations is apparent through their ability to identify family members and those accompanying them, such as "tete hela, tete nai," indicating a grasp of interpersonal connections. The capacity to name several people and categorize them as friends, including "vito, tama, alpian, layan, lejo," also reinforces their developing social-semantic awareness.

Beyond direct conceptual understanding, the data also reveals the child's ability to express preferences and categorize objects. Their explanation of specific types of games, such as "main lompat tangan, pelosotan, ayunan," demonstrates an understanding of activities. The clarification of objects based on their function as toys, like "mobil lemot, motol-motolan, lobot-lobotan," indicates a functional semantic understanding. The child's ability to choose and name favorite foods, such as "ikan, ayam," points to the development of semantic preferences. More complex categorization is evident in their grouping of foods based on vegetable types like "brokoli, sayur asem, jagung," demonstrating an understanding of categories. Similarly, grouping and identifying the colors of clothes, such as "bilu ama ijo," demonstrates an understanding of color concepts. Finally, the child's discussion of favorite animals, "kucing, anjing," and their ability to add the characteristic "bisa dinaikin" (can be ridden) shows not only familiarity with animals

but also the ability to attribute characteristics to them, indicating a more sophisticated level of semantic understanding. Overall, this semantic data illustrates a child actively constructing their understanding of the world, categorizing information, and expressing complex thoughts through an evolving linguistic system

CONCLUSION

This study explored the phonological, morphological, and semantic development of a five-year-old child through naturalistic observation and linguistic analysis. The findings revealed that the child exhibited typical features of early language acquisition, such as phoneme substitution and reduction, morphological constructions like affixation and reduplication, and semantic categorization based on personal experience. These patterns align with established theories in developmental linguistics, highlighting the gradual and systematic nature of language learning.

Phonologically, the child demonstrated simplification strategies to manage complex sounds, particularly in the articulation of the /r/ phoneme. Morphologically, the child applied productive word formation processes to communicate effectively, including noun and verb combinations. Semantically, the child showed increasing ability to group, label, and relate objects and experiences through language.

These findings underscore the importance of studying spontaneous language to understand how children internalize linguistic rules. Future research could expand this analysis by comparing developmental stages across multiple children or exploring pragmatic and syntactic aspects to provide a more comprehensive picture of early language acquisition.

REFERENCE

- Brown, R. (1973). *A first language: The early stages*. Harvard University Press.
- Chomsky, N. (1965). *Aspects of the theory of syntax*. MIT Press.
- Clark, E. V. (2003). *Language acquisition and development*. Cambridge University Press.
- Clark, E. V. (2009). *First language acquisition* (2nd ed.). Cambridge University Press.
- Ingram, D. (1989). *First language acquisition: Method, description, and explanation*. Cambridge University Press.
- Jakobson, R. (1941). *Kindersprache, Aphasie und allgemeine Lautgesetze* [Child language, aphasia and phonological universals]. Uppsala Universitet.
- Nilsen, E. S., & Fox, M. (2020). *Language development in early childhood*. Routledge.
<https://doi.org/10.4324/9780429356477>
- Peter, L. (2024). *Foundations of child morphology: A developmental perspective*. Oxford University Press.
- Stampe, D. (1979). *A dissertation on natural phonology*. Garland Publishing.