Paradigma Lingua
Jurnal Penelitian Bahasa dan Sastra, Volume 5 No 3 2025
E ISSN: 3047-9401
P ISSN: 2723-3561

Phonological, Morphological, and Semantic Development in a Three-Year-Old's First Language Acquisition

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Abstract

Language acquisition is a natural and foundational process that begins in early childhood, as children gradually develop the ability to understand and use their first language. This study investigates the early stages of language development in a three-year-old child, with a focus on three core linguistic components: phonology, morphology, and semantics. Data were collected through naturalistic observation and recorded interactions between the child and a researcher, which were transcribed for analysis. The findings reveal significant progress in all three areas. Phonologically, the child exhibits common developmental patterns such as simplification of complex sounds and preference for familiar phonemes. Morphological development is marked by the use of truncated and restructured word forms, reflecting early awareness of word formation despite incomplete structures. Semantically, the child is able to express preferences, describe familiar objects, and convey daily experiences, even with limited grammatical accuracy. The presence of typical age-related errors underscores a healthy and dynamic progression in language acquisition. Overall, the study highlights how cognitive growth and social interaction jointly shape language development during early childhood.

Keywords: First Language Acquisition, Phonology, Morphology, Semantics, Child Language Development

A. Introduction

Language functions as a primary means of communication within society, shaped by Language acquisition during early childhood represents a critical period in cognitive and communicative development. Children between the ages of three and five experience

rapid linguistic growth, transitioning from basic lexical usage to increasingly complex and rule-governed structures. This period is often referred to as the "explosion phase" of language development, wherein fundamental systems of language—phonology, morphology, and semantics—become more stabilized and interconnected (Clark, 2009; Hoff, 2013).

Phonological development, which involves the perception and production of speech sounds, is essential for intelligibility and lexical access. During the preschool years, children refine their phoneme inventories, correct earlier misarticulations, and develop prosodic features such as stress and intonation patterns (Vihman, 2014). These developments are foundational for successful verbal communication and literacy readiness.

Simultaneously, morphological growth enables children to manipulate word forms to convey tense, number, possession, and other grammatical categories. Research has shown that the productive use of inflectional and derivational morphemes typically begins in this age range and is often marked by overgeneralization errors—a natural part of internalizing morphological rules (Brown, 1973; Leonard, 2014).

Semantic development, encompassing the acquisition of word meanings and conceptual networks, also undergoes significant expansion during this stage. Children begin to form richer vocabularies, develop category hierarchies, and learn to negotiate meaning in more sophisticated ways (Bloom, 2000). Their growing semantic awareness reflects both cognitive maturation and increasing social-linguistic interaction.

Despite the extensive literature on individual aspects of language development, integrative studies that examine how these domains interact in real-time language use among preschool-aged children remain relatively limited. Understanding how semantic knowledge, phonological accuracy, and morphological complexity co-develop offers important insights into the architecture of the mental lexicon and the underlying mechanisms of language acquisition.

This paper, therefore, aims to explore the interrelated development of semantics, phonology, and morphology in children aged 3 to 5. By examining these linguistic domains in naturalistic language use, this study contributes to a more nuanced understanding of early language development, with implications for both theoretical linguistics and educational practice.

B. Method

1. Research Design

This study employed a qualitative descriptive approach to explore the linguistic features of early language development in a child aged 3–5 years. The focus was on

analyzing the child's phonological, morphological, and semantic structures as they appear in spontaneous spoken language. This approach allowed for a naturalistic examination of the developmental patterns in sound production, word formation, and meaning-making, in line with psycholinguistic frameworks (Miles & Huberman, 1994).

2. Participant

The subject of this study was a female child aged 4 years and 3 months, referred to as “Bunga” (a pseudonym), who was observed in a natural home environment. The child is a native speaker of Indonesian and has exposure to English through media and limited bilingual interaction. The child exhibits typical developmental milestones with no reported language or cognitive delays.

3. Data Collection

Data were collected through naturalistic observation and audio recordings of the child's daily conversations over a two-week period. A total of 30 utterances were transcribed and analyzed, with attention to phonological errors, morphological structures, and semantic content. The conversations occurred during everyday activities such as playtime, drawing, watching television, and eating.

Informed consent was obtained from the child's parent, and ethical considerations were upheld according to child observation protocols.

4. Data Analysis

Data were analyzed using a three-tiered linguistic coding scheme based on the following components:

1) Phonological Analysis: Each utterance was examined for phonological processes such as substitution, assimilation, deletion, and cluster reduction. Patterns were interpreted with reference to developmental norms established by Ingram (1989) and supported by recent insights from Laing (2017) and Flynn (2016).
2) Morphological Analysis: Words were coded for their root structures, affixes (if any), syllable formation, and deviation from adult forms. Special attention was paid to morphemic truncation, syllable reordering, and the use of reduplication, in line with frameworks from Clark (2003) and Naser & Gandhi (2024).
3) Semantic Analysis: Utterances were evaluated for lexical category, thematic content, and conceptual organization. The child’s ability to express possession, preference, description, and categorization was assessed to reveal emerging semantic networks. Analytical guidelines from Clark (2003) and recent developmental semantic studies were followed.

Each utterance was categorized according to its dominant linguistic feature. For example, “tli” (for “three”) was primarily classified under phonology, while “bisikel” (for “bicycle”) was analyzed for both phonological and morphological simplification. Semantic content was interpreted based on the coherence of meaning, thematic relevance, and referential use in context.

5. Trustworthiness

To ensure credibility, transcription and coding were conducted by two trained analysts and reviewed independently. Triangulation was achieved by combining phonological, morphological, and semantic analysis. Peer debriefing was conducted to validate interpretations. Observational data were also supported by field notes capturing the situational context of each utterance.

C. Findings and Discussion

1. Phonology

Phonology, a subfield of linguistics, investigates the sound systems of languages, including how sounds (phonemes) are produced, perceived, and structured within a linguistic framework. In language acquisition, phonology examines the developmental stages through which children learn to identify, differentiate, and articulate sounds as their cognitive and physiological capabilities evolve (Yavas, 2011). This area of study is crucial for understanding how young learners transition from limited babbling to intelligible speech.

Research has shown that children acquiring their first language tend to follow predictable phonological patterns, often simplifying complex sounds to facilitate articulation. These simplification processes—such as substitution, omission, and assimilation—are considered typical during early development (Vihman, 2014). For example, in this study, a child aged approximately four produced the word “three” as *tli*, simplifying the marked consonant cluster /θr/ into /tl/, a more accessible combination. Similarly, “drawing” was realized as *dawing*, evidencing cluster reduction through the omission of /r/.

The data gathered include ten representative utterances that reflect consistent phonological adaptations:

No	Utterance	Target Word	Meaning
1	Tli	Three	Yes
2	Hobi	Hobby	-
3	Dawing	Drawing	-

4	Favolit	Favorite	-
5	Cawot	Carrot	-
6	Haiza	Hafiza	-
7	Colol	Color	-
8	Ket	Cat	-
9	Buu	Blue	-

The patterns above indicate that the child actively employed systematic phonological strategies, particularly simplification and substitution. The consistent alteration of sounds (e.g., /v/ to /b/, /r/ omission) aligns with Laing's (2017) concept of *phonological networks*, where children form internalized systems based on frequent and articulatorily simpler sounds.

Additionally, the results are consistent with Flynn's (2016) theory of *phonological redeployment*, which posits that children reuse familiar phonetic forms across different lexical items. For example, the sounds /t/, /k/, /b/, and /l/ occur frequently in the child's outputs, suggesting a reliance on a core set of easily produced phonemes. "Blue," for instance, becomes *buu*, demonstrating both cluster reduction and vowel elongation—a technique that retains rhythmic balance while reducing articulatory complexity.

Substitutions such as /ð/ → /d/ or /v/ → /b/ (as in *favolit*) reflect reliance on voiced plosives already present in the child's active sound repertoire. The utterance *haiza* (for "Hafiza") further supports this, indicating both phoneme substitution and syllable simplification. These features illustrate how the child prioritizes ease of articulation and demonstrates internalized phonological organization.

The child's phonological development is marked by coherent, strategic processes that facilitate speech production using known and accessible forms. These findings highlight the dynamic and structured nature of early phonological acquisition.

2. Morphology

Morphology is a core area of linguistics that investigates the internal composition of words, focusing on how these words are constructed from smaller meaningful elements known as morphemes. These morphemes can function as roots, prefixes, or suffixes and carry semantic or grammatical value (Aronoff & Fudeman, 2011). In the context of language acquisition, morphological development refers to a child's progressive ability to use these morphemes accurately to form complete words, understand word modifications (e.g., pluralization and tense), and apply word derivations (Clark, 2003).

In early language acquisition, children typically begin by producing basic root words before gradually integrating inflectional and derivational morphemes into their

speech. This progression reflects growing grammatical competence and cognitive maturity (Tomasello, 2000).

The following utterances illustrate common features of early morphological acquisition:

No	Utterance	Target Word	Meaning
1	Mengo	Mango	Fruit
2	Kesa	Keysa	Name
3	Pupel	Purple	Color
4	Em no, wit	White	Color
5	Katun	Cartoon	Show
6	Pololo	Pororo	Show
7	Pay	Play	Action
8	Bisikel	Bicycle	Object

These utterances reveal several patterns common in early morphological processing. Most notably, the child simplifies multisyllabic words through processes like truncation, syllable reduction, and syllable reordering. For instance, “bicycle” becomes *bisikel*, demonstrating the preservation of the root morphemes but an adjustment in syllable structure to match articulatory capabilities. Similarly, “cartoon” is reduced to *katun*, and “Pororo” becomes *pololo*, indicating that the child is experimenting with sound patterns and morphological structures they find easier to articulate (Clark, 2003; Naser & Gandhi, 2024).

These forms also reflect what Nilsen and Fox (2020) term morphological bootstrapping, where children utilize rhythmic or familiar patterns as templates for constructing novel words. This suggests that while the output may not match adult-like forms, the production is still guided by internalized rules and recognizable structures.

There is also notable evidence of morphemic retention despite surface-level errors. In utterances like *mengo* (for mango) and *pupel* (for purple), essential morphemes (/mang-/, /purp-/) are partially retained, showing that the child is beginning to grasp root word structure but still finds certain phonological features—like consonant clusters or final sounds—difficult to produce. In *“em no, wit”* (interpreted as "white"), the child approximates the word phonetically, dropping the diphthong yet maintaining the core semantic reference. These patterns reinforce Peter’s (2024) assertion that early morphological development is rule-governed, albeit in an emergent and often approximative manner.

Overall, these findings reflect that children in the early stages of morphological acquisition are not simply mimicking sounds but are actively engaging with morphemic

structures. Their speech reveals a strategic blend of imitation, simplification, and adaptation, marking a steady path toward mature linguistic competence.

3. Semantics

Semantics is the area of linguistics concerned with the study of meaning in language—how words, phrases, and sentences convey ideas, objects, actions, and emotions (Saeed, 2016). In early language acquisition, semantic development refers to a child's growing ability to associate words with appropriate meanings, organize them in meaningful combinations, and apply them within relevant contexts (Clark, 2003).

Children begin to develop semantic understanding by learning how specific words refer to objects, actions, or experiences in their environment. At the earliest stages—typically when they acquire their first 40 to 50 words—these tend to be names for familiar people, foods, toys, and daily routines, as these categories dominate the child's immediate surroundings (Bavin, 2009; Clark, 2003, pp. 76–77). During this period, children usually produce one-word utterances, where grammatical categorization is secondary to meaning-making. Rather than focusing on formal sentence construction, the child prioritizes expressing needs, preferences, or observations.

The utterances below reflect early semantic use in child language:

No	Utterance	Intended Meaning
1	Unga hobi dowing	Bunga's hobby is drawing
2	Unga uka masraa ber	Bunga likes Marsha and the Bear
3	Kulang ica	Marsha and the Bear
4	Kurang bisa manguw keisa suka bwah	Mango is Keisya's favorite fruit
5	Pupel yang Keisya suka	Purple, the color Keisya likes
6	Kamarku wait	My room is white
7	Pizah hobie going	Hafizah's hobby is drawing
8	I paporit kat	My favorite animal is a cat
9	Fojen	Frozen (film)
10	Oleh	Can (boleh)

The data demonstrate that the child is beginning to connect linguistic expressions with personal experiences and familiar referents. For instance, "Unga hobi dowing" (Bunga's hobby is drawing) shows semantic organization around an activity and ownership, indicating awareness of both action and relational concepts. Similarly, "Unga uka masraa ber" reflects an effort to convey preference for a TV show, even though the syntax remains immature. These utterances align with findings by Bloom and Lahey (1978), who emphasized the role of meaning relations in early two- and three-word combinations.

The utterance “Kamarku wait” (“my room is white”) combines a noun (room) with a descriptive adjective (white), showcasing the child’s early understanding of attributive structures, even if language mixing occurs. This cross-linguistic transfer is common among bilingual or multilingual learners, where lexical access may depend on exposure and familiarity (Genesee et al., 2004).

Additionally, the phrase “I paporit kat” (my favorite animal is a cat) highlights the child’s ability to express preference and categorization. Despite pronunciation and syntactic errors, the child demonstrates an emerging ability to group and describe entities meaningfully—a key indicator of semantic growth (Vigliocco et al., 2006).

Repetition of key lexical items such as “hobby” and “favorite” across multiple utterances indicates that the child is beginning to generalize word meanings and apply them in varying contexts. This kind of semantic extension supports the development of word networks, where concepts are linked across semantic fields (Barrett, 1995). Likewise, errors such as “fojen” (for Frozen) and “oleh” (for boleh/can) demonstrate the child’s effort to incorporate verbs and function words into their vocabulary, even if full mastery has not yet been achieved.

Overall, these utterances provide evidence that the child’s semantic system is actively developing through meaningful associations, concept mapping, and contextual usage. The child's efforts to express ownership, preference, action, and description suggest a rapidly expanding semantic repertoire that aligns with typical developmental trajectories in early childhood language acquisition.

D. Conclusion

The findings of this study highlight that first language acquisition in a three-year-old child unfolds as a natural, gradual process influenced by both cognitive maturation and social interaction. The child's linguistic output across phonological, morphological, and semantic domains demonstrates patterns consistent with typical early language development.

Phonologically, the child simplifies complex sound structures by reducing consonant clusters and substituting difficult phonemes with more accessible ones—strategies commonly observed in young learners as they refine their articulatory skills. Morphologically, the child employs truncated and restructured word forms, indicating an emerging grasp of word construction, even though full mastery of inflectional and derivational forms has yet to be achieved. Semantically, the child demonstrates the ability to express preferences, describe familiar objects, and refer to everyday experiences, reflecting a growing awareness of meaning-making in context.

Despite occasional inaccuracies, these linguistic behaviors are not signs of developmental delay but rather evidence of active experimentation and learning. The child's consistent use of approximated forms and repeated exposure to language through interaction with caregivers supports the notion that language acquisition is both socially driven and cognitively rooted. This study reinforces the view that language development in early childhood is a dynamic, exploratory process. With continued exposure, engagement, and support from the environment, the child is likely to achieve more sophisticated and accurate language use in the coming stages of development.

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