

**SPLIT PATHS OR SHARED ROOTS: A STUDY OF PARAMETRIC ACTIVATION  
IN ENGLISH–URDU BILINGUAL ACQUISITION WITHIN A UG FRAMEWORK****Sabah Shafique**[sasha@numl.edu.pk](mailto:sasha@numl.edu.pk)

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**Abstract**

*Universal Grammar (UG) has been widely studied for its parameter activation across languages, whereas its adaptability to dual-language acquisition has received less attention. This case study aimed to investigate the potential of UG parameters in the context of the dual language hypothesis, focusing on three key syntactic parameters: Wh-movement, Head position, and the pro-Drop parameter. A descriptive analysis has been employed to examine a three-year-old child's spontaneous utterances during random conversations in English and Urdu. The findings reveal that the child has accurately used parameters for both languages, with most instances being minor, involving overlapping or omission. However, the indiscernibilities do not interfere with the child's broader ability to keep both linguistic systems separate. The results support the applicability and adaptability of UG for dual language acquisition, enabling navigation of syntactic variation between two languages, underscoring its sensitivity to deep grammatical principles and the activation of parameters by external linguistic input. Despite significant findings, more data, including more children or comparisons with languages other than English and Urdu, are needed to strengthen the UG parameter theory.*

**Keywords:**

*Language acquisition; Universal Grammar; Wh-movement; Wh-in-situ; Pro-drop parameter; head position parameter;*

**Introduction and Background**

In this era, where a significant portion of the population has access to technology, academia, and recent Artificial Intelligence (AI) tools, English is inevitably becoming the dominant language. At the same time, communities strive to keep their native languages alive. As a result, a struggle can be observed among people to adopt English while preserving their linguistic heritage, resulting in bilingualism or multicultural landscapes. The increase in bilingualism has been observed and reported in census data studies (Posel & Zeller, 2015; Rahman, 2006). Although Pakistan is a multilingual country, after its independence in 1947, Urdu became the national language, spoken in all the provinces. English arrived in this region with the British, who ruled the subcontinent for almost a hundred years, and later on, English gained the status of an official language of Pakistan. At the time of independence, the English language was spoken by the British and the elite class and was used for official and legal documentation, correspondence, and educational purposes. Despite subsequent efforts to replace legal and official terms and their translations, English still retained its status and prominence (Haque, 2022). A landscape with national and official languages exposes citizens to two languages: Urdu as their first language and English as their second, which they often encounter simultaneously. In this scenario, a study on child language acquisition that exposes children to two languages simultaneously at a very young age seems pertinent.

Language acquisition has been the subject of considerable attention for almost six decades, as explored by Chomsky. He (Chomsky, 1957) posits the concept of Universal Grammar, which explains the common principles and parameters underlying all languages

worldwide. UG posits that all human languages are only superficially diverse and share fundamental underlying similarities attributable to innate principles and parameters unique to language acquisition (Chomsky, 2000a). Children do not acquire a language through a trial-and-error process, as Maratsos (1998) argues, because they do not make commission errors. Berwick (1985) highlights the impulsive nature of children's speech and considers them 'Deterministic' learners. Chomsky's idea of language acquisition centers on the concept of parameters, suggesting that learning a language is a process for another learner (Khan & Baloch, & Khan, 2018). The idea of a parameter is rooted in the language acquisition device (LAD) proposed by Chomsky, which posits that a switch or device internalizes the structure or function of language. The switch is used metaphorically to denote parameter activation, when a parameter is learned by the child and incorporated into their linguistic data. The activation triggers a single value and informs decisions about actual use and experience (Roeper, 1999).

There is a plethora of studies on language acquisition that align with the tenets of Universal Grammar (UG) theory (Hawkins, 2004), as well as those that reject UG (Martohardjono & Gair, 2011), which outline its limited implications or debunk it altogether. However, these studies have focused on one-language acquisition, examining its principles and parameters, and research on the development of child acquisition that involves acquiring two languages simultaneously or being exposed to bilingualism from birth is scarce. Thus, a research niche emerges for investigating dual language acquisition. English and Urdu differ significantly in their syntax, particularly in verb order. English has subject-verb-object (SVO) word order, while Urdu has subject-object-verb (SOV); therefore, there is a likelihood of different parameter activation or, more generally, of different language acquisition processes in the two languages. English has a wh-movement parameter, and Urdu is a wh-situ language. Similarly, both languages differ in head positioning and the use of pro-drops. The current case study examines the activation of Universal Grammar (UG) parameters in bilingual children in Pakistan who acquire English (wh-movement, pro-drop) and Urdu (pro-drop, wh-in-situ). Therefore, the study has anchored the following research questions and objectives:

#### **Research Question**

1. Does UG account for the simultaneous activation of parameters for English and Urdu?
2. Is there any linguistic interference between the two languages' acquisition?

#### **Objectives:**

- To investigate the applicability of UG principles and parameters activation for English and Urdu simultaneously
- To compare the dual language acquisition from the UG's perspective for both languages

The study will help fill the research gap regarding non-European languages and deepen the understanding of UG's theoretical relevance and potential applicability in the South Asian bilingual context. It will provide insights into bilinguals' minds and how they negotiate between languages with conflicting syntactic structures. Since Pakistan, with a population of 212.4 million, has a de facto bilingual or even multilingual status (Ashraf, 2023), studying the acquisition of language(s) by children will provide insightful data for bilingual education, second language learners, tutors, stakeholders, and policymakers in Pakistan and worldwide.

#### **Literature & Theoretical Underpinings**

Chomsky has dedicated a significant proportion of his life to studying language and its acquisition. Chomsky distinguished between I-language and E-language, with I-language, or internalized language, being genetically endowed and regarded as Universal Grammar. The E-language externally receives input (Richard, 1990). This distinction serves as the foundation for the emergence of Universal Grammar (UG) theory.

UG is 'an intricate and highly constrained structure' (Chomsky, 1986). Its central tenets include universality, convergence, and the poverty of the stimulus. The idea of universality posits the existence of common underlying properties shared by all languages. Convergence suggests a shared deep grammar among all language learners, despite the different languages they acquire. Lastly, the poverty of the stimulus resonates with UG, highlighting that children learn components of language for which they do not receive input (Chomsky, 2007).

Chomsky advocates for the innateness of language acquisition. He cites the example of a rock, his granddaughter, and a rabbit, arguing that if people differentiate among these, language is innate. If they believe otherwise, they think all three are the same entities (Chomsky, 2000b). Besides innateness, Chomsky (1986) asserts that all human languages share a common, fundamental framework of Principles and proposes that variation between languages is due to Parameters that set the foundation of Principles and Parameters Theory. The commonality in principles implying that they are 'built in' is also suggested by Cook and Newson (1996). Additionally, Holmberg (2010) theorizes that variation in independently complex language systems is due to variation in parameters.

As per the Principles and Parameters theory, language acquisition is a matter of 'parametric setting' (Chomsky, 2006). The activation of parameters holds dominance over mere instructions (principles) of language in language acquisition. There is no unity among syntacticians on the definite number of parameters. Fodor and Sakas & Nishimoto (2019) outlined 13 parameters; Baker (2001) highlighted 10; Pinker (1994) believes that only a few are needed; and others are also unable to determine a fixed number of parameters. It would be appropriate to consider Kayne's (2005) suggestion in this regard, which associates each functional element with a single parameter, thereby increasing the overall number of parameters. It is worth noting that they may disagree on which parameters comprise them or on their number, but do not deny the existence of parameters that underpin the implication of UG.

Three parameters have been outlined by Radford (2009): the Head position parameter, the Wh-parameter, and the Null Subject parameter. Head position mandates the projection of the head word in every sentence, so language can either be head-first (at the initial position) or head-last (at the final position). English is a Head-initial language, while Urdu is a Head-final language. The wh-parameter determines if the wh-word can be brought to the front or foregrounded in an interrogative syntactic structure. Null subject allows imperative or finite verbs to opt for subject highlighting in Pro-drop languages. In English, wh-words move from the middle of syntactic organization to the beginning of the structure to make questions or interrogative sentences (Radford, 2004), while Urdu does not have such movement; instead, the wh-word maintains its position and is therefore called wh-in-Situ language.

In first-language acquisition, the parametric setting is adjusted to the parametric value of that language (Ayoum, 2005). Since principles are considered part of innate knowledge, language learners automatically learn their first language according to its parameters (Radford, 2009). Children tend to adjust to the parametric values of their language and undergo a process of setting and resetting L1 parameters until they acquire a language thoroughly (Carin et al., 1994). Thus, language acquisition depends on parameter setting (Clahsen and Hong, 1995).

In second language acquisition (SLA), Universal Grammar (UG) parameters acquired during first language acquisition facilitate learning by enabling adjustments and resets of L2 parameters (Atkinson, 2019). Ellis (2021) found a significant influence of parameter resetting on second-language learning.

The existing body of literature highlights that UG is a controversial yet theoretically grounded concept, with sufficient corroboration. Several studies have investigated the potential of Universal Grammar (UG) in first- and second-language acquisition; however, the

simultaneous activation of UG parameters remains unexplored. Therefore, the current study seeks to investigate the concurrent activation of parameters using empirical data from a child being exposed to two languages in a bilingual environment.

### Methodology and Data Collection

This is a descriptive case study that takes a qualitative research paradigm. The participant is a 3-year-old child who has been exposed to Urdu and English since birth. His utterances, produced randomly, were recorded over three years during conversations with his mother (who spoke only English) and other relatives (who spoke Urdu). The recorded conversations, which included dialogues, were naturalistic observations and contained spontaneous speech, storytelling sessions, and casual dialogues. The data were extensive, so only some examples have been shared, particularly those linked to three parameters of UG that are the scope of the current study: the wh parameter, the head position parameter, and the pro-drop parameter, comparing and analyzing data from both English and Urdu.

### Findings and Interpretations

The collected conversations' transcribed verbatim were analyzed in the light of UG's outlined parametric theory. The wh-parameter is present in both English and Urdu, but with different features. Head positioning also differs between the two languages. And Urdu is pro-drop, whereas English is non-pro-drop. The child's utterances have been shared for his interactions in both languages, separately, on different occasions. The equivalents are presented in the table below for both languages and were uttered at various times. The utterances with the mother were all in English, while those with other relatives were in Urdu. The data are presented in the tables below to highlight the examples, followed by an analysis and discussion for each parameter.

#### Wh Parameter

English, with wh-movement, and Urdu, with wh-in-situ, exhibit differences in parameter switching. Examples from the case for the wh-parameter have been shared in the table below:

Some Examples for wh-parameters in English and Urdu

S#	English wh-movement Child's Utterance	Urdu WH-in-Situ Child's Utterance
1	*Where you going? Correct: Where are you going?	*Kahan ja-re ho? Correct: Ap kahan ja rahe ho?
2	*Why you crying? Correct: Why are you crying?	*Baba kyun ni aye? Correct: Baba kyun nahi aye?
3	*When I get chocolate? Correct: When can I get chocolate?	*Kab ayega Ali? Correct: Ali kab ayega?
4	*What are you cooking?	*Mama kya kar-re ha? Correct: Mama kya kar rahi hain?
5	*Whose toy this? Correct: Whose toy is this?	*Wo kis ice-creame hai? Correct: Wo kis ki ice-creame hai?

In examples 1, 2, and 3, the child has correctly placed the wh-word in a sentence. However, his addition of helping verbs is weak at this stage. In example 4, he used 'are' accurately, which depicts his internalized knowledge of principles. He may be adjusting and

learning, and he should be able to self-repair in the coming weeks or months. In example 5, the child attempts a challenging construction and again omits a helping verb, but places the wh-word accurately. The critical point to note is the use of the correct wh-word in the syntactic structure in English. Therefore, it can be inferred that UG's parameter for wh-movement has shifted, and the child can engage in conversation using correct structures with slight errors, which is very normal at this stage of language acquisition.

In Urdu sentences, it was anticipated that the child might not use wh-in-situ accurately, but the data suggested otherwise. The child not only maintained wh-in-situ but also kept the parameters of the two language systems apart. There was a chance of mixing up the parameters, but the child produced syntactically correct sentences, with other mistakes involving omitted nouns or helping verbs. In example 1, he omits the 'ap' pronoun. He only says 'kahan ja rahe ho', which conveys the meaning in real time since Urdu is a pro-drop language, and any adult would not only understand such an utterance but also prefer such a construction in their daily lives.

Additionally, the child attempts to assimilate 'ja' and 'rahe', saying 'ja-re', a pervasive feature in adult speech. In example 2, 'baba kyun ni aye', he contracts the sound 'nahi' to 'ni', which is a phonological limitation at this stage, as he faced difficulty in articulating the 'h' sound, so he prefers saying 'ni'. In example 3, 'kab ayega Ali', he changes the word order, which is incorrect. This could be viewed as either a mistake or a learning step in the language-learning process. Since he produced correct utterances on other occasions, the parameter is set, but his cognition is being processed. This could have been interpreted as parameter mixing due to English, but since he produced the maximum number of wh-in-situ sentences in Urdu, this possibility will be excluded. In Example 4, he is seen using correct syntax again, thereby setting and ensuring the UGs' wh-movement parameter functions correctly. In the last example, the child omits 'ki', a possessive postposition in Urdu that marks gender and number, a feature that is slightly complex for a child and differs from other wh-in-situ constructions. However, the wh-word has been placed correctly.

Overall, the wh-parameter has been set for both languages simultaneously, with no significant or noticeable interference.

#### Verbs Head Position Parameter

English is a head-initial language, while Urdu is a head-final language. The examples from the child's speech have been given in the table below:

Some Examples for Head parameters in English and Urdu

S#	English Head Initial Child's Utterance	Urdu Head Final Child's Utterance
1	I like toys.	*Muje pasand hai chocolate. Muje chocolate pasand hai.
2	Nano is sleeping.	*Baba so-re hain. Correct: Baba so rahe hain.
3	This is my iPad.	*Mera hai. Correct: Yeh iPad mera hai.
4	Cat jumping on bed. Correct: The cat is jumping on the bed.	*Ali khel ni ra. Correct: Ali merai sath khel nahi raha hai.

5	Want milk. Correct: I want milk.	*Muje do. Muje bhi chocolate do.
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In examples 1, 2, and 3, the child has successfully placed the head in the initial position, which reflects wh-parameter activation in English. In example 3, the child interestingly uses the helping verb 'is', which he had omitted in his previous speech. In example 4, he omits the article 'the' and the helping verb 'is', implying that the article and helping verb parameters still need activation or resetting, but 'cat' is placed in the initial position accurately. This means that the deep, inherent language information is not acquired all at once; instead, it's a stepwise, unconscious process in which a child gradually acquires language.

Furthermore, Example 5 highlights the potential for children to make mistakes and reflects the learning process, even for the most switched-on parameters. The child omits 'I', which could suggest interference from the Urdu parameter. In this pro-drop language, omitting the subject does not affect meaning or syntactic accuracy, but other correct utterances in examples 1-4 hamper such assumptions.

In Urdu sentences, example 1, "Muje pasand hai chocolate", the syntax is slightly out of order, placing chocolate in the final position. However, in other sentences, the head-final position has been maintained. In example 2, assimilation of 'so-re' instead of 'so rahe' is indicated for speech fluency. Example 3, 'Mera hai', without a subject, but the head position and the rest of the sentence with accurate syntax are significantly relevant. Urdu, being a pro-drop language, allows omission of the subject, and the child has activated this parameter as well, as evidenced by this example. In example 4, 'Ali khel ni ra', the negative 'nahi' was supposed to be before the verb 'khel', which is a mistake for the head position parameter, which reflects the transitional stage of activation for head position. The last example is evident for both the head-position and pro-drop parameters. Since the child is adopting and adapting to features of two different languages simultaneously, the analysis justifies the applicability of Universal Grammar (UG) for the acquisition of both languages, English and Urdu.

### Pro-drop Parameter

English is a non-pro-drop language, while Urdu is a pro-drop language. The examples from the child's utterances have been given in the table below:

Some Examples for Pro-drop parameters in English and Urdu

S#	English Non-Pro-drop Child's Utterance	Urdu Pro-drop Child's Utterance
1	I am playing.	Khana khata hun. Main khana khata hun.
2	Baba not playing me. Baba is not playing with me.	Jaoun ga. Main jaoun ga.
3	*want milk. I want milk.	Khel-ra hun. Main khel raha hun.
4	She going. She is going.	Kab ayegi? Woh kab ayegi?
5	I like bananas.	Utho. Mama utho.

English is a non-pro-drop language, and the child has not omitted the subject, except on one occasion, as shown in example 3. In example 2, he again omits the helping verb 'is' but does not skip the subject 'Baba'; however, in example 3, he skips the subject 'I' when he was a bit annoyed and hungry, so he asked the mother in haste for 'milk'. It could be linked to emotions and speech in a hurry, which is not uncommon in adults either; they tend to skip words or shorten phrases to convey the message quickly. Since he has not omitted the subject very frequently, this cannot be attributed to interference from the Urdu pro-drop parameter, which he was learning simultaneously. Examples 4 and 5 support this assumption and suggest the activation of a non-pro-drop parameter in English language acquisition.

In the case of Urdu utterances, the child dropped subjects every time he answered others. There were other examples where he added a subject, possibly influenced by English, which requires one. In Urdu, dropping subjects will not affect the grammar or meaning, and children mostly do so because adults often omit subjects in their conversations. In Urdu writing, the subject is typically written, but since the child has only been exposed to the spoken form, they have adopted pro-drop and use it effectively.

### **Discussion**

The findings confirm the applicability of UG to the simultaneous acquisition of English and Urdu, supporting Chomsky's (1957, 1998, 2000a, 2000b) view of an innate biological endowment of principles and the activation of parameters through external linguistic input. UG's parameter activation applies to dual language acquisition, just as it does to one-language acquisition, as suggested by Hawkins (2004) and Chomsky (2006; 2007). The successful activation of distinct parameters demonstrates that the children do not merely mimic on the surface, but are involved in a highly robust language acquisition system and employ an underlying, complex process of internalizing grammatical structure, which corroborates Berwick's (1985) findings that children are not passive but 'Deterministic Learners'.

This study found the Parametric setting to be significant and influential in language acquisition, a finding also suggested by Roeper (1999) and Clahsen and Hong (1995). Additionally, parameter setting is closely associated with the parametric values of each language, as reported by Carin et al. (1994). The Wh-movement parameter in English and Wh-in-Situ in Urdu highlight the deep learning of syntactic rules in a language, despite surface-level differences. Additionally, they do not consider translation or adhere to a word-for-word phenomenon when acquiring language. The activation of the head parameter in English and Urdu, as well as its resistance to cross-linguistic variation, suggests a robust setting and is consistent with Baker's (1996) concept of macroparameters and their firmly fixed acquisition once activated. The consistent pro-drop in Urdu and the avoidance of subject omission in English highlight that children rely on morphosyntactic cues, such as verb endings, rather than semantic cues. The findings of the study also corroborate those of Huang (1982), who confirmed that wh-movement attaches to syntax rather than to surface-structure order.

The occasional mix-up of parameter settings for the two languages is natural in a bilingual setting. It is found to be very limited or almost non-existent in the data. This implies that children are capable of differentiating between two language systems and their parameters and keeping them apart. Parametric confusion cannot be considered a failed acquisition; instead, it is a superficial and temporary cross-linguistic influence. Volterra and Taeschner (1978) also found that children's capacity to differentiate between the syntax of two languages emerges in early infancy. Additionally, Genesee (1989) corroborates the current study's findings, suggesting that children not only develop two distinct language systems from the outset but also can differentiate between them in contextually sensitive ways.

The simultaneous acquisition, or dual language acquisition, challenges earlier notions of delayed learning or cross-linguistic inference and highlights the flexibility of cognition and the adaptability of UG's parameters. Additionally, the child requires consistent and clear input for each language in balance to facilitate smooth language acquisition.

### Conclusion

English and Urdu have different parametric settings, which pose difficulty for a second-language learner of English. However, in this parametric setting, when a child is exposed to both languages from the very beginning, simultaneous acquisition is facilitated. Very little cross-linguistic interference was noted on occasion, but it was self-repaired most of the time. Therefore, UG offers distinct blueprints for grammar and syntax, particularly for two different language systems. This study validates the applicability of UG for the simultaneous activation of parameters for two languages; however, further inquiry is required with more data and different language parameters to understand the phenomenon in depth. Future researchers may adopt a longitudinal design to observe consistency or change in children's language development. Additionally, including more participants from diverse linguistic backgrounds in future studies would reveal significant insights into dual language acquisition.

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