

Bilingual Learning Strategies of Arabic and English: A Perspective of Noam Chomsky's Linguistic Thought

Muhammad Iqbal Hasanuddin¹, Muhammad Irwan¹, Muhammad Rusydi², Abd. Muis Said²

¹State Islamic Institute of Parepare, Indonesia

²Alauddin State Islamic University Makassar, Indonesia

*Corresponding Author: Muhammad Iqbal Hasanuddin

Email: hmuhiqbalhasanuddin@iainpare.ac.id



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Abstract

This systematic literature review evaluates Arabic English bilingual strategies through the lens of Noam Chomsky's Universal Grammar and generative linguistics. By synthesizing 30 high quality studies from an initial 585 records, the review confirms that generative frameworks provide substantial explanatory power for bilingual acquisition. Key findings indicate that L1 Arabic transfer significantly shapes English L2 development, particularly in pro drop and verb raising parameters. While the Full Transfer Full Access model suggests learners retain the ability to achieve native like proficiency, adult learners struggle with parameter resetting when relying solely on positive evidence. Pedagogical implications are profound: explicit instruction using negative evidence and heightened awareness of syntactic differences are essential to reduce interference errors. Additionally, mastering collocations requires targeted focus beyond simple translation equivalence. The review highlights critical research gaps in longitudinal data and child bilingualism, offering vital directions for curriculum design and teacher training.

Introduction

Bilingualism represents a multifaceted cognitive phenomenon that has received significant scholarly attention across the fields of linguistics and education (White, 2003; Amjad & Tayyab, 2025; Dikilitaş et al., 2025). Researchers distinguish between simultaneous acquisition from birth and sequential acquisition which occurs after a primary language is established (Serratrice, 2014). This dual language ability enhances metalinguistic awareness and executive function while shaping cultural identity (White, 2003). Within second language acquisition studies, bilingualism prompts inquiry into the nature of linguistic knowledge and the role of innate components (White, 1990). These questions influence educational policy and our understanding of human cognitive architecture (White, 2003). Generative grammar provides a unique perspective on the universal properties of language that govern linguistic development (White, 2012; Portelance & Jasbi, 2025; Matende & Hlungwani, 2025).

Arabic and English constitute typologically distinct families with profound structural differences (Arab World English Journal, 2023). Arabic is a Semitic language featuring rich morphological inflection and flexible Verb Subject Object word order (Hassan, 2001; Saadiyeh et al., 2025; Boulesnam & Boucetti, 2025). It also utilizes pro drop properties and a complex system for gender and number agreement (Hassan, 2001). In contrast, English is a Germanic language defined by fixed Subject Verb Object word order and obligatory subject pronouns (Hassan, 2001). The learning context for these two languages is increasingly important because English serves as a dominant global language for science and technology. Arabic speakers in the Middle East often engage with English as a foreign language in diverse university settings.

Additionally, diaspora communities face the task of maintaining Arabic while acquiring English in heritage contexts.

Empirical evidence indicates that Arabic speakers learning English face difficulties with article usage and verb tense marking (AlBzour et al., 2015; Zaretsky & Russak, 2024; Alghazo et al., 2025). They also struggle with preposition selection and specific word order patterns in questions (AlBzour et al., 2015; Herselina et al., 2024). English speakers learning Arabic encounter challenges regarding root and pattern morphology and the dual number system (Kara, 2025). These variations allow researchers to test predictions about language transfer and the role of Universal Grammar (Arab World English Journal, 2023). Noam Chomsky transformed the field by proposing that Universal Grammar is an innate biological endowment (White, 1989). This framework explains how children acquire language rapidly despite the poverty of the stimulus (White, 2003).

The principles and parameters framework suggests that Universal Grammar contains invariant principles and a set of parameters for cross linguistic variation (Saeipoor et al., 2011; Helong, 2024; Fukui, 2023). Principles include structure dependency while parameters involve settings such as pro drop and verb raising (Saeipoor et al., 2011). Acquisition involves setting these parameters to values appropriate for the target language (Saeipoor et al., 2011; Cruchinho et al., 2024; Kosyakova et al., 2022). Debate persists regarding whether Universal Grammar remains fully accessible to adult learners (Jmila, 2015). The Full Transfer Full Access hypothesis proposes that the primary language grammar transfers completely at the start while Universal Grammar access allows for eventual restructuring (Arab World English Journal, 2023).

Recent work in the Minimalist Program focuses on formal features and how they are assembled into syntactic structures (Chekili, 2016). The feature reassembly account explains persistent difficulties in second language acquisition as a failure to configure these features correctly (El Ghazoly, 2025). Understanding how these constructs apply to the Arabic and English context requires a systematic review of existing empirical studies (Jmila, 2015). This review evaluates the explanatory adequacy of these theories for understanding bilingual learning strategies.

Research Objectives and Questions

This systematic literature review aims to synthesize empirical and theoretical research on bilingual learning strategies for Arabic and English, analyzed through the framework of Chomsky's linguistic thought. The specific objectives are: (1) To identify and characterize the body of research that applies Chomsky's Universal Grammar, principles and parameters, and generative linguistics to Arabic-English bilingual acquisition. (2) To synthesize empirical findings on parameter resetting, L1 transfer, and interlanguage development in Arabic-English bilingual learners. (3) To evaluate the explanatory adequacy of Chomskyan theoretical frameworks for understanding bilingual learning strategies in the Arabic-English context. (4) To identify pedagogical implications and instructional recommendations derived from UG-based research on Arabic-English bilingualism. And (5) To identify gaps in the current literature and propose directions for future research.

Methods

The research methodology employed a structured systematic review process designed to identify, select, and synthesize existing literature concerning bilingual learning strategies in Arabic and English. The review was guided by the theoretical framework of Chomskyan generative grammar and its subsequent developments.

Search Strategy and Data Sources

A comprehensive search was executed across five primary academic databases to ensure broad coverage of relevant studies in linguistics, education, and cognitive science. The databases consulted were SciSpace Paper Search, SciSpace Full Text Search, Google Scholar, PubMed, and ArXiv.

The search strategy utilized specific keywords combined with Boolean operators to capture the intersection of the language pair and the theoretical framework. The precise search terms included: "Arabic English bilingualism" AND "generative grammar SLA"; "universal grammar second language"; "parameter resetting Arabic English"; and "minimalist program language acquisition". The search was delimited to publications spanning from 1989 to 2025. This timeframe was selected to encompass foundational studies in Principles and Parameters theory through to more recent investigations utilizing the Minimalist Program.

Eligibility Criteria

To ensure the relevance and theoretical depth of the review, strict inclusion and exclusion criteria were applied to all identified records. These criteria are detailed in Table 1 below.

Table 1: Detailed Eligibility Criteria

Criterion Category	Inclusion Criteria	Exclusion Criteria
Population	Studies focusing specifically on bilingual learners of Arabic and English regardless of age or proficiency level.	Studies focusing on other language pairs or monolingual speakers.
Theoretical Framework	Studies explicitly utilizing Chomskyan theories as the primary analytical lens, including Universal Grammar, Principles and Parameters, or the Minimalist Program.	Studies utilizing non generative frameworks such as functionalist, cognitive interactionist, or purely sociocultural approaches.
Publication Type	Peer reviewed academic articles and substantive doctoral dissertations.	Conference abstracts, editorials, textbooks, and non-peer reviewed articles.
Linguistic Focus	Studies addressing syntactic or morphological phenomena pertinent to generative theory.	Studies focusing solely on phonology, pragmatics, or lexical acquisition without syntactic analysis.
Timeframe	Publications dated between 1989 and 2025.	Publications dated prior to 1989.

Study Selection Process

The selection process followed the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) guidelines. Initial screening involved reviewing titles and abstracts to eliminate records clearly irrelevant to the topic. The remaining articles were subjected to a full text review to ensure they met all methodological rigor and theoretical depth requirements.

The progression of studies through the selection process, from initial identification to final inclusion, is visually represented in the PRISMA flow diagram below.

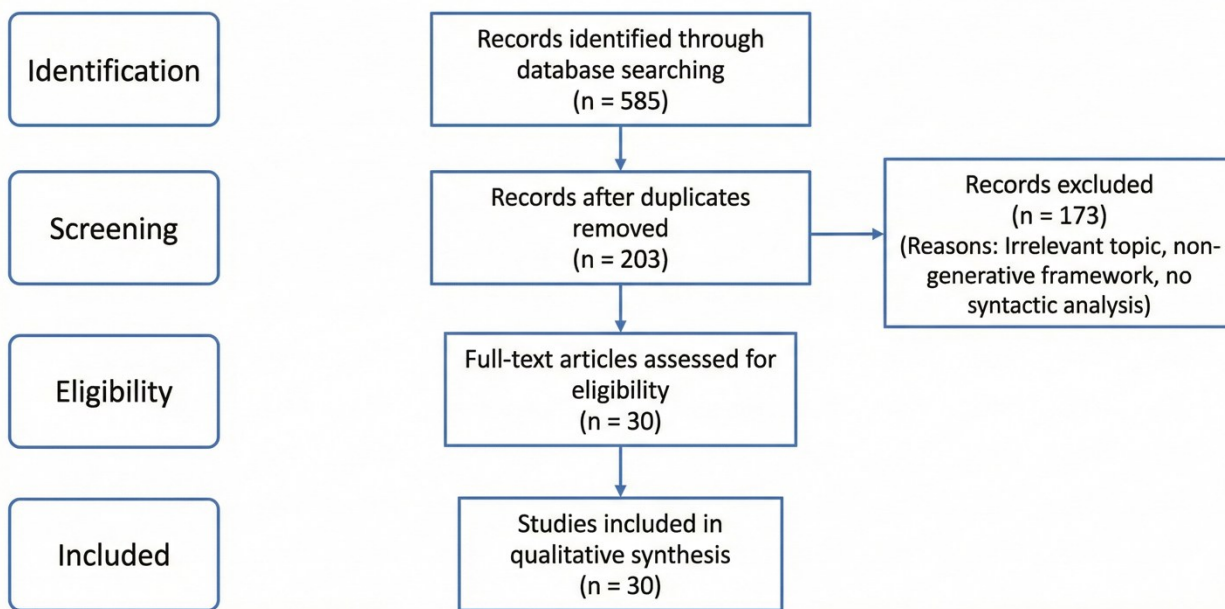


Figure 1. PRISMA FLOW Diagram

Quality Assessment and Data Extraction

Following the selection process, the 30 included studies underwent a rigorous quality assessment. This assessment evaluated research design clarity, the adequacy of participant descriptions, the validity of data collection instruments, and the depth of theoretical integration. Studies were categorized based on the criteria outlined in Table 2.

Table 2: Quality Assessment Criteria

Quality Rating	Description of Criteria
High	Clear research questions grounded in theory; robust methodology with appropriate sample size; transparent data analysis; strong connection between findings and theoretical constructs.
Moderate	Adequate research design with minor limitations in sampling or analysis; theoretical framework present but less integrated with findings; conclusions generally supported by data.
Low	Poorly defined research questions; significant methodological flaws; weak or absent theoretical framing; conclusions not adequately supported by evidence. (Note: Low quality studies were largely excluded during full text screening).

Data extraction was performed using a standardized form. Extracted data included bibliographic details, the specific linguistic phenomena investigated (such as pro drop properties, verb movement, or feature specification), the theoretical sub framework applied, main findings regarding transfer and acquisition stages, and pedagogical implications suggested by the authors.

Data Synthesis

Given the theoretical and qualitative nature of the selected studies, a thematic synthesis approach was adopted. This involved identifying recurring themes across the literature, such as evidence regarding the Full Transfer Full Access hypothesis, specific instances of parameter resetting challenges, and persistent difficulties explained by feature reassembly failures in the

Minimalist framework. The synthesis aimed to provide a coherent overview of how generative theory explains the learning strategies of Arabic and English bilinguals.

Results and Discussion

Characteristics of Included Studies

The 30 included studies exhibit considerable diversity in study design, participant populations, geographic contexts, and specific linguistic phenomena investigated. The following subsections analyze these characteristics in detail.

Study Design Distribution

The methodological approaches employed across the corpus reflect the multifaceted nature of research in this domain. As shown in Table 3, theoretical reviews constitute the largest single category, followed by empirical experimental studies employing tasks such as grammaticality judgments.

Table 3: Distribution of Study Designs (N=30)

Study Design Category	Description / Examples	Frequency	Percentage
Theoretical Reviews and Syntheses	Papers developing, applying, or critiquing Chomskyan frameworks in relation to SLA or bilingualism.	12	40%
Empirical Experimental Studies	Controlled designs using judgment tasks or targeted production to investigate specific phenomena like parameter resetting or wh constraints.	7	23%
Corpus and Essay Analysis Studies	Analysis of learner produced data including student essays, translation assignments, and naturalistic production to identify error patterns.	5	17%
Mixed Methods Studies	Studies integrating quantitative and qualitative approaches, such as combining experimental tasks with interview data.	4	13%
Case Studies	Longitudinal or intensive investigations of individuals or small groups focusing on specific acquisition processes.	2	7%
Total		30	100%

Participant and Geographic Characteristics

Table 4 provides a breakdown of the participant characteristics in the empirical studies reporting this data. The majority of studies focused on adult university students who were Arabic L1 speakers learning English.

Table 4: Participant Characteristics in Empirical Studies

Characteristic Category	Subgroup	Frequency (Studies)	Percentage
Age Groups	Adult university students	15	50%
	Children (ages 3-12)	2	7%
	Mixed or unspecified	13	43%
L1 Backgrounds	Arabic L1 learning English L2	22	73%

	English L1 learning Arabic L2	2	7%
	Bilingual Arabic English	2	7%
	General SLA (not language specific)	4	13%
Proficiency Levels	Advanced learners	8	27%
	Mixed proficiency levels	6	20%
	Unspecified or not applicable	16	53%
Sample Sizes	Small (N < 30)	5	-
	Medium (N = 30-100)	4	-
	Large (N > 100)	3	-

Table 5 illustrates the geographic distribution of the research. While a significant portion of the studies addressed general SLA principles without a specific regional focus, studies contextualized within the Arab world represented diverse locations.

Table 5: Geographic Distribution of Research Contexts

Geographic Context	Frequency
General SLA (not region specific)	18
Multiple Arab contexts or unspecified	5
Saudi Arabia	2
Morocco	2
Libya	1
Yemen	1
Jordan	1
Total	30

Linguistic Phenomena and Theoretical Frameworks

The corpus addresses a wide range of morphosyntactic and lexical phenomena investigated through varying Chomskyan lenses. Table 6 categorizes the specific linguistic foci, highlighting the emphasis on parameter setting and syntactic structures.

Table 6: Categories of Linguistic Phenomena Investigated

Category	Specific Examples from Included Studies
Parameter Setting/Resetting	Pro drop parameter; verb raising parameter; head directionality.
Syntactic Structures	Adjective phrases; relative clauses; wh constraints; agreement patterns; word order.
Interface Phenomena	Syntax semantics interface; syntax morphology interface.
Bilingual Phenomena	Code switching; transfer and interference.
Lexical Phenomena	Collocations; formulaic language.

Table 7 details the specific theoretical frameworks employed. While all studies engage with generative theory, the Principles and Parameters model remains the most frequently utilized framework within this specific corpus.

Table 7: Distribution of Theoretical Frameworks Employed

Theoretical Framework	Frequency
Principles and Parameters (P&P)	12
General UG (without specific model specified)	9
Minimalist Program	5
Full Transfer/Full Access (FT/FA) Hypothesis	4

Total	30
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Publication Timeline

The temporal distribution of the included studies, presented in Table 8, reveals sustained and growing interest in this research area over time, with a notable peak in publications between 2010 and 2019.

Table 8: Publication Timeline of Included Studies

Time Period	Frequency	Trend Description
1989-1999	4	Foundational work linking UG to SLA.
2000-2009	3	Continued exploration of established models.
2010-2019	14	Peak period of research activity in this domain.
2020-2025	9	Continued contemporary interest.
Total	30	

Key Themes Identified

Thematic analysis of the 30 included studies reveals six major themes that organize the research landscape regarding Arabic-English bilingual learning strategies within generative frameworks.

Universal Grammar Access in L2 Acquisition

A central debate across the corpus concerns whether and to what extent Universal Grammar remains accessible to second language learners beyond the critical period. Studies address competing hypotheses including No Access, Partial Access, Full Access, and Full Transfer Full Access models (Benmamoun, 2000; Bley-Vroman, 1989; Chomsky, 1995; Fassi Fehri, 2012; Pezami, 2023; Al-Shorafat, 2023; Soltan, 2007; White, 2003; Zohra, 2017). Empirical evidence from Arabic-English contexts generally supports continued UG access, though with important qualifications regarding the strong role of L1 transfer and the difficulty of parameter resetting in adulthood (Saeipoor et al., 2011; White, 2003).

Parameter Resetting and L1 Transfer

Multiple studies investigate whether adult Arabic-English learners can successfully reset parameters that differ between their L1 and L2, particularly the pro drop parameter and verb raising parameter (Al-Shorafat, 2023; Saeipoor et al., 2011). Findings consistently indicate that parameter resetting is a difficult process and is often incomplete, especially when instruction provides only positive evidence without explicit negative feedback (Saeipoor et al., 2011). L1 Arabic structures transfer heavily to English interlanguage, creating persistent non target patterns (AlBzour et al., 2015; Ghama, 2023; Hassan, 2001; Jmila, 2015). The Full Transfer Full Access model receives strong empirical support, with studies showing initial complete transfer of the L1 grammar followed by gradual restructuring driven by increased input (White, 2003).

Morphosyntactic Acquisition and Interface Phenomena

Research extensively examines specific morphosyntactic domains where Arabic and English differ structurally, including agreement systems (Attia, 2023), relative clause formation (Aljarrah et al., 2023), adjective phrase structure (Al-Haq & Atta, 2021; White, 2003), and word order patterns (AlBzour et al., 2015; Ghama, 2023). Studies highlight particular difficulty at interface domains where syntax interacts directly with morphology or semantics (AlBzour et al., 2015; Alomari, 2024). Feature reassembly accounts within the Minimalist Program are

increasingly proposed to explain persistent L2 difficulties at these interfaces (Alomari, 2024; Attia, 2023).

Lexical Acquisition and Collocations

Several studies extend generative inquiry to address lexical phenomena, particularly collocation acquisition, which poses significant challenges for Arabic-English learners (Al-Wahy, 2021). A UG based model incorporating subcategorization frames and selectional restrictions is proposed to explain these collocability difficulties (Al-Wahy, 2021). Research identifies both L1 transfer errors, where Arabic collocation patterns are inappropriately applied to English, and L2 influence errors, characterized by the overgeneralization of English patterns (Al-Wahy, 2021).

Bilingual Development and Code Switching

A smaller subset of studies examines simultaneous bilingual acquisition in Arabic-English children (Lardi et al., 2017; Serratrice, 2014). These studies investigate how bilingual children manage two distinct grammatical systems, the role of cross linguistic influence between the languages, and the abstract syntactic constraints governing code switching (Serratrice, 2014). Findings suggest that while bilingual children's syntactic development may lag slightly behind monolingual peers, it strictly follows UG constrained developmental paths (Serratrice, 2014).

Pedagogical Applications of UG Theory

Many studies explicitly draw pedagogical implications from UG based research findings (AlBzour et al., 2015; Al-Mahrooqi & Denman, 2018; Al-Wahy, 2021; Jmila, 2015; Mahmoud, 2024; Saeipoor et al., 2011). Recommendations include incorporating negative evidence in teaching to facilitate parameter resetting (Saeipoor et al., 2011), raising learners' meta linguistic awareness of structural differences between Arabic and English (AlBzour et al., 2015; Al-Wahy, 2021), avoiding misleading one to one translation equivalences in vocabulary instruction (Al-Wahy, 2021), and designing instruction that specifically targets problematic interface phenomena (AlBzour et al., 2015). Theoretical papers argue convincingly that understanding UG principles can inform more effective, linguistically grounded teaching approaches (Al-Mahrooqi & Denman, 2018; Jmila, 2015).

Synthesis of Findings on Bilingual Learning Strategies

Arabic English learners consistently utilize L1 Based Hypothesis Formation by relying on their primary language grammatical knowledge to construct initial assumptions about L2 structures, which aligns with the Full Transfer hypothesis (Arab World English Journal, 2023; Jmila, 2015; AlBzour et al., 2015; Smirkou, n.d.). This strategy becomes evident when learners produce English sentences that reflect Arabic parameter settings, such as using null subjects where pronouns are obligatory or adopting a Verb Subject Object word order (Abugharsa et al., 2021; AlBzour et al., 2015). While this method facilitates early communication, it can result in fossilization if the learner does not receive explicit instruction to move beyond these initial transfer effects (Abugharsa et al., 2021).

Building upon these initial stages, learners employ Positive Transfer Exploitation to identify and utilize structural similarities between Arabic and English, especially in domains where the languages share universal properties (AlBzour et al., 2015). For instance, both languages use linking verbs, allowing learners to transfer this specific syntactic knowledge with high success rates (AlBzour et al., 2015). This strategy is significantly more effective when learners are made consciously aware of these cross linguistic similarities through contrastive analysis during instruction (Hassan, 2001).

As proficiency increases, learners often shift to the Overgeneralization of L2 Rules, applying new English rules to linguistic contexts where they do not properly apply (Shormani, 2014). This behavior demonstrates an active engagement with L2 input and ongoing hypothesis testing that is consistent with Universal Grammar guided development (Shormani, 2014). One common example of this is the overgeneralization of English collocation patterns, which leads to the creation of non target word combinations (Shormani, 2014).

To manage the immediate cognitive and communicative demands while their deeper grammatical knowledge is still developing, many learners rely on Formulaic Language Use (Shormani, 2014). This involves the use of memorized sequences and chunks, particularly in the acquisition of collocations where learners may memorize frequent combinations without fully analyzing their internal syntactic structure (Shormani, 2014). This strategy allows for functional fluency even when underlying generative rules have not been fully mastered.

Advanced learners, particularly in formal educational settings, develop Metalinguistic Awareness and engage in Explicit Learning to navigate the structural differences between their two languages (Abugharsa et al., 2021; AlBzour et al., 2015). This conscious knowledge is a vital tool for parameter resetting and error correction, particularly when it is paired with negative evidence that highlights what is ungrammatical (Abugharsa et al., 2021). Research suggests that targeted instruction on specific parameters or interface phenomena can greatly accelerate the overall acquisition process (Abugharsa et al., 2021; AlBzour et al., 2015).

In accordance with the Full Access component of the generative model, learners demonstrate Input Driven Restructuring as they unconsciously reorganize their interlanguage grammars in response to increased L2 exposure (Arab World English Journal, 2023). This strategy reflects continued access to Universal Grammar principles throughout the learning lifespan (Arab World English Journal, 2023). With sufficient input, studies show that learners can eventually overcome their initial L1 transfer effects and reach native like proficiency in specific syntactic domains (Arab World English Journal, 2023).

Finally, some learners may adopt Avoidance as a survival strategy when they encounter structures that differ significantly from Arabic or those that have proven difficult to master (Shormani, 2014). While this behavior effectively reduces the immediate error rate, it carries the risk of limiting the learner's communicative range and delaying the acquisition of more complex grammatical structures (Shormani, 2014). This highlights the need for balanced instruction that encourages learners to engage with challenging linguistic features.

Universal Grammar Applications to Arabic-English Acquisition

The corpus provides substantial evidence for the application and relevance of Universal Grammar (UG) principles to Arabic-English bilingual acquisition. While these findings highlight the explanatory power of generative linguistics, they also reveal important limitations and areas of ongoing debate regarding adult acquisition. Research indicates that UG serves as a fundamental constraint on how these two typologically distinct languages are acquired and processed.

Fundamental UG principles appear to govern the development of interlanguage in Arabic-English learners. Studies confirm that these learners' interlanguage grammars strictly respect structure dependency, ensuring that even non-target structures are constrained by universal linguistic rules rather than being arbitrary errors (Jmila, 2015; White, 2003). Furthermore, research on *wh*-movement and relative clause acquisition demonstrates that learners respect subadjacency constraints and island effects (Algady, 2013; VNU Journal, 2025). Because these constraints are often not explicitly taught, their presence in learner language provides strong

evidence for continued access to innate linguistic knowledge (VNU Journal, 2025). Learners' phrase structure representations also conform to X-bar theory, maintaining universal principles of headedness, complementation, and specifier positions (Saeipoor et al., 2011). Additionally, evidence suggests that learners respect binding principles governing the interpretation of anaphora and pronouns (White, 1998; White, 2003).

A major focus of the research involves how learners navigate different parameter settings between Arabic and English. The pro-drop parameter has received the most attention, as Arabic permits null subjects whereas English requires obligatory subject pronouns. Studies consistently find that Arabic L1 learners face persistent difficulty acquiring the English setting, often producing null subjects even at advanced proficiency levels (Abugharsa et al., 2021). Similarly, the verb-raising parameter presents challenges; while Arabic exhibits verb raising to inflection, English does not. Arabic learners frequently struggle with this distinction, leading to errors in adverb placement and negation patterns (Abugharsa et al., 2021). Although both languages are primarily head-initial, they differ in specific constructions like noun-adjective order. Studies show that learners generally succeed in acquiring English adjective phrase patterns, despite initial transfer effects from Arabic (Arab World English Journal, 2023).

The Full Transfer/Full Access (FT/FA) model receives substantial empirical support within the Arabic-English context (Arab World English Journal, 2023). This model proposes that the initial state of L2 acquisition consists of the complete L1 grammar (Full Transfer), while learners retain full access to UG principles to enable eventual restructuring (Full Access). Evidence for Full Transfer is seen in the systematic way Arabic learners initially apply their native parameter settings and structural patterns to English (Arab World English Journal, 2023; AlBzour et al., 2015; Jmila, 2015). Conversely, evidence for Full Access is found in learners' ability to overcome these initial L1 effects and achieve native-like proficiency in specific domains when provided with sufficient input (Arab World English Journal, 2023).

Recent scholarship has shifted toward the Minimalist Program, focusing on formal features and feature reassembly (El-Ghazoly, n.d.; Chekili, 2016). This framework explains persistent difficulties as a failure to correctly reassemble linguistic features into the configurations required by the target language (Chekili, 2016). For instance, research on agreement in Arabic L2 by English speakers and English L2 by Arabic speakers investigates whether errors stem from failures in feature selection or feature assembly (El-Ghazoly, n.d.; Chekili, 2016). This approach provides a more fine-grained account of persistent L2 difficulties, particularly in domains involving the syntax-morphology interface.

Despite the explanatory power of UG, the corpus identifies several challenges. Many advanced learners fail to fully reset parameters, suggesting that UG access in adulthood may be constrained or requires specific types of evidence (Abugharsa et al., 2021). Furthermore, substantial individual variation in success points to factors beyond UG, such as age of acquisition, input quality, motivation, and aptitude (Arab World English Journal, 2023; Chekili, 2016). UG principles provide the most clarity in core syntax but offer less explanatory power for lexical phenomena like collocation acquisition or interface phenomena involving semantics and pragmatics (AlBzour et al., 2015; Shormani, 2014). Finally, the observation that positive evidence alone often fails to trigger parameter resetting challenges strong nativist predictions and suggests that explicit instruction and negative evidence play a critical role in adult acquisition (Abugharsa et al., 2021).

L1 Transfer and Interference Patterns

L1 Arabic transfer and interference constitute a major theme across the corpus, with studies documenting specific patterns and attempting to explain them within Universal Grammar (UG) based frameworks. Researchers focus on how the structural properties of Arabic influence the development of English interlanguage, often resulting in systematic non target forms.

The most consistently documented transfer pattern involves Arabic learners producing null subjects in English contexts where subjects are obligatory (Abugharsa et al., 2021; Jmila, 2015; AlBzour et al., 2015). Examples include sentences like "Is raining" or "Went to the store yesterday" where the subject pronoun is omitted (Abugharsa et al., 2021). This pattern reflects the transfer of the Arabic pro drop parameter setting and persists even at advanced proficiency levels (Abugharsa et al., 2021). Additionally, studies document Arabic learners producing Verb Subject Object (VSO) order in English, particularly in written production (AlBzour et al., 2015; Smirkou, n.d.). This transfer is more common in formal or literary contexts, reflecting the influence of Modern Standard Arabic (AlBzour et al., 2015).

Arabic verb raising also leads to transfer errors in English negation and question formation (Abugharsa et al., 2021). Arabic learners may produce sentences like "He speaks not English" where the verb appears before negation, or "Speaks he English?" where the verb appears before the subject in questions (Abugharsa et al., 2021). Furthermore, Arabic's rich agreement system, including gender and number marking on verbs and adjectives, leads to both positive and negative transfer (El Ghazoly, n.d.; AlBzour et al., 2015). Learners may struggle with the relatively impoverished agreement system of English or overgeneralize agreement where English does not require it (AlBzour et al., 2015). Arabic also allows copula omission in present tense equational sentences, leading to errors such as "He teacher" or "The book interesting" in English (AlBzour et al., 2015). This pattern is particularly common in early stages of acquisition (AlBzour et al., 2015).

Studies of collocation acquisition reveal extensive L1 transfer, with learners producing non target English collocations based on Arabic patterns (Shormani, 2014). For example, Arabic learners may produce "make a bath" influenced by the Arabic expression "يأخذ حمام" instead of the target "take a bath" (Shormani, 2014). Shormani's (2014) analysis of 60 essays by Yemeni learners identified L1 transfer as a major source of collocation errors, alongside L2 influence and mutual errors. Additionally, Arabic and English preposition systems differ significantly, leading to transfer errors where learners select prepositions based on Arabic equivalents (AlBzour et al., 2015). Studies also note transfer at the syntax semantics interface, where Arabic and English express similar meanings through different structural means, such as possession or aspectual distinctions (AlBzour et al., 2015).

Not all transfer is negative, as structural similarities between Arabic and English can facilitate acquisition (AlBzour et al., 2015). Both languages use linking verbs like "be," "become," or "seem," and learners successfully transfer this knowledge (AlBzour et al., 2015). Both languages also have similar basic phrase structures for noun phrases, verb phrases, and prepositional phrases, which facilitates the acquisition of these categories (AlBzour et al., 2015).

Transfer patterns are explained as resulting from the initial state of L2 acquisition being the complete L1 grammar, according to the Full Transfer Hypothesis (Arab World English Journal, 2023; Jmila, 2015). Arabic learners begin with Arabic parameter settings and structural representations, which are gradually restructured in response to English input (Arab World English Journal, 2023). From a Principles and Parameters account, transfer occurs when Arabic

and English have different parameter settings (Abugharsa et al., 2021; Hassan, 2001). Within the Minimalist framework, transfer results from differences in how formal features are assembled in Arabic versus English, requiring learners to reassemble features in new configurations (Chekili, 2016). Some studies argue for a role for contrastive analysis within a UG framework, suggesting that systematic comparison of structures can predict areas of difficulty (Hassan, 2001).

Studies document developmental trajectories in transfer patterns (Arab World English Journal, 2023; Alsharif, 2016). Initial stages show extensive transfer with structures that closely reflect Arabic grammar (Arab World English Journal, 2023). Intermediate stages show mixed patterns where some target like structures coexist with persistent transfer errors (Arab World English Journal, 2023). Advanced stages show reduced but not eliminated transfer, particularly in domains requiring parameter resetting (Abugharsa et al., 2021; Arab World English Journal, 2023). Some transfer patterns may fossilize and become permanent features of learner interlanguage (Abugharsa et al., 2021).

Conclusion

This systematic literature review synthesized 30 studies examining bilingual learning strategies for Arabic and English through the lens of Chomsky's linguistic theories. The review addressed six research questions concerning the scope of research, the role of Universal Grammar in acquisition, primary language transfer patterns, parameter resetting, learning strategies, and pedagogical implications.

The evidence compiled in this review strongly supports the view that Universal Grammar remains accessible in Arabic English second language acquisition, contradicting hypotheses that suggest access is lost after a critical period. Learners' interlanguage grammars consistently respect universal constraints such as structure dependency and subjacency even when they produce non target structures, which indicates that Universal Grammar is a fundamental component of human linguistic competence throughout the lifespan. Among the various theoretical frameworks, the Full Transfer Full Access model provides the strongest explanation for observed acquisition patterns. Arabic speakers initially transfer their complete primary language grammar to English, which results in pervasive transfer effects, yet they retain the ability to restructure their internal grammar in response to English input. This model effectively accounts for the persistence of native language influence while allowing for the possibility of native like attainment in specific domains.

Adult Arabic English learners demonstrate persistent difficulty resetting parameters that differ between their languages, particularly regarding pro drop and verb raising properties. Because positive evidence alone is often insufficient for parameter resetting, explicit instruction that incorporates negative evidence is essential to facilitate this process. This finding suggests that adult second language acquisition differs from child acquisition by requiring explicit metalinguistic awareness and targeted feedback. Furthermore, the transfer from Arabic to English is systematic and predictable rather than random, reflecting clear structural differences between the two languages. Recognized patterns such as null subjects, Verb Subject Object word order, verb raising effects, copula omission, and collocation errors can be anticipated through contrastive analysis, which enables educators to design more effective and focused instructional interventions.

Particular attention must be paid to interface phenomena where syntax interacts with morphology, semantics, or pragmatics. These domains pose unique challenges that are unlikely to be resolved through implicit learning alone, and the Minimalist Program provides

valuable feature reassembly accounts to explain these difficulties. Similarly, lexical phenomena such as collocation acquisition require explicit instruction because one to one translation equivalence is often misleading. Despite the depth of current research, significant gaps remain, particularly regarding longitudinal studies, child bilingual acquisition, and intervention studies testing instruction informed by generative theory. Addressing these gaps through a more thorough integration of Minimalist frameworks will be necessary to advance the understanding of Arabic English bilingualism.

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