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UNVEILING DEEP AND SURFACE STRUCTURES: APPLYING TRANSFORMATIONAL THEORY TO ARABIC VERBAL SENTENCES

Diqi Agam Lubis[1], Abdullah Ubaid[2], Sahya Husein[3]

[123]Universitas Islam Negeri Maulana Malik Ibrahim Malang

Email: diqiagam@uin-malang.ac.id[1], ubaid.rta@uin-malang.ac.id[2], hesahya@uin-malang.ac.id[3]

Abstrak

Penelitian ini menganalisis struktur kalimat dalam bahasa Arab menggunakan teori transformasi Noam Chomsky, dengan menyoroti kompleksitas sintaksis yang khas dari bahasa Arab. Pendekatan yang digunakan adalah kualitatif deskriptif, dengan data diambil dari kalimat-kalimat dalam *Bahan Ajar Al Arabiyah Lil Hayah Jilid 1*. Metodologi melibatkan identifikasi struktur dalam dan struktur permukaan, serta penerapan transformasi sintaksis seperti inversi, penghilangan, dan substitusi untuk mengungkap prinsip-prinsip gramatikal yang mendasarinya. Hasil penelitian menunjukkan bahwa elemen seperti partikel eksistensial (هناك) sering dihilangkan dalam struktur permukaan untuk meningkatkan efisiensi, sementara inversi urutan kata memperkuat penekanan dalam kalimat verbal. Penyederhanaan kalimat majemuk juga ditemukan, yang memfasilitasi komunikasi yang lebih jelas. Transformasi ini menegaskan fleksibilitas sintaksis bahasa Arab dan kesesuaiannya dengan prinsip tata bahasa universal Chomsky. Studi ini menyimpulkan bahwa teori transformasi efektif dalam mengungkap kompleksitas sintaksis bahasa Arab, memberikan kontribusi pada teori linguistik dan pembelajaran bahasa secara praktis. Integrasi kerangka linguistik Barat dengan analisis tata bahasa Arab membuka jalur baru untuk penelitian linguistik komparatif.

Kata Kunci: A*nalisis kalimat, Sintaksis bahasa Arab, Struktur dalam teori transformasi, tata bahasa Chomsky*

INTRODUCTION

Arabic is one of the languages with a complex and unique grammatical structure. Sentence structure in Arabic is heavily influenced by classical grammatical rules (nahwu), which have been developed over centuries (Rosyidah, 2019). One of its distinctive features is the flexibility of word order, such as in verbal (fi'liyah) and nominal (ismiyah) sentence structures (Arifuddin et al., 2022). This presents challenges in analyzing and understanding sentence constructions, especially when compared to languages like English, which have a more rigid word order. The phonological complexity of Arabic involves rules regarding short and long vowels, as well as restrictions on the grouping of different consonants across dialects (Owens & Embarki, 2023). Additionally, the Arabic morphological system is highly dependent on root patterns and specific schemes, allowing for the prediction of meaning and function of new words (DiMeo & Hassan, 2024).

In syntax, Arabic sentence structure relies on syntactic connections that are central to al-Jurjānī's theory of nazm, which links grammar with meaning, enabling a deeper understanding of sentence constructions (Daşkiran, 2019). The contextual relationships in Arabic are also particularly strong, where phonology and morphology serve as syntactic markers and grammatical particles to achieve clarity and avoid ambiguity in expression (Hassan, 2013). Historically, Classical Arabic, which forms the basis of Modern Standard Arabic (MSA), has a strong prescriptive nature, with rules derived from authoritative texts and traditional speech patterns (Khamray, 2021). However, MSA continues to undergo modern adaptations reflecting contemporary linguistic phenomena (Sawaie, 2015).

From a grammatical analysis perspective, parsing Arabic presents its own challenges due to its complex grammatical structure, necessitating innovative approaches such as Tree-Adjoining Grammar (TAG) and Context-Free Grammar (CFG) for more accurate analysis (Ben Khelil et al., 2023). Moreover, the dialectal variation in Arabic is influenced by historical, geographical, social, and cultural factors, further enriching its linguistic diversity (Al-Ajrami, 2024). Understanding these various aspects can lead to a more systematic and effective approach to learning Arabic, enhancing appreciation for its structural and historical richness.

Noam Chomsky's transformational theory offers a framework for understanding the structure of languages universally, emphasizing the relationship between surface structure and deep structure. Chomsky argues that all human languages share a basic structure known as Universal Grammar, which suggests that the ability to use language is innate to humans (Hırık, 2019);(Karabulut, 2008). Transformations such as addition, deletion, movement, and substitution of elements in a sentence modify the deep structure into the surface structure (Anbar, 2009);(Hırık, 2019). Over time, this theory evolved through the Extended Standard Theory and Minimalist Program, which simplified syntactic rules to focus on the

core principles of language structure (Deming & Helong, 2024)**;** (Golumbia, 2010)**.** This theory also had a significant impact on cognitive science and language acquisition research, supporting the idea that children have an innate ability to learn languages with minimal input (Slabakova, 2021); (Glackin, 2011). While the application of this theory to Arabic remains limited, it can help explain complex syntactic phenomena such as word order inversion and constituent relations.

However, in-depth analysis of how transformational theory can be applied to Arabic sentence structures is still underexplored (Saputra & Musthofa, 2022). Several studies have applied Chomsky's Government and Binding Theory (GB) to analyze different word orders in Arabic, such as SVO, VOS, and VSO, as well as nominal and interrogative sentences, with results showing high accuracy when implemented in Prolog (Bassam et al., 2014);(Moubaiddin et al., 2013). Furthermore, Al-Fehri integrated indicators from Functional Lexical Theory to support the original word order of Arabic sentence structures as VSO through concepts like focalization and dislocation (Albtoush, 2020). Shallow parsing approaches have also been used to identify constituents in Arabic sentences without detailing their internal structures, successfully improving clause boundary detection accuracy (Mohammed & Omar, 2011). On the other hand, computational approaches such as Lexical Functional Grammar (LFG) and Head-driven Phrase Structure Grammar (HPSG) have been employed to handle Arabic syntax, including morphological analysis and natural language processing applications (Alnajem et al., 2021);(Ismail et al., 2017). Despite the progress, further exploration is required to fully understand the application of transformational theory in Arabic linguistics.

Therefore, this study aims to analyze Arabic sentence structures using transformational theory. It is expected that this research will contribute to Arabic syntactic studies while expanding the application of Chomsky's theory in cross-linguistic analysis.

THEORETICAL REVIEW

Transformational Generative Grammar (TGG), introduced by Noam Chomsky, has revolutionized our understanding of language structure. This theory positions language as an innate cognitive ability that enables humans to generate infinite sentences from a limited set of rules. In the context of Arabic, the application of TGG helps uncover the relationship between deep structure and surface structure in fi'liyah sentences. Transformations such as word order inversion, deletion of elements, and substitution play crucial roles in shaping sentences that are more efficient and communicative. Chomsky states that all languages share Universal Grammar, and this is evident in the syntactic flexibility of Arabic, which remains consistent with these principles (Anbar, 2009).

Arabic has unique syntactic complexity, particularly in fi'liyah sentence structures that emphasize word order flexibility (Ma & Mishbahuddin, 2024).

Chomsky's approach allows for a deeper analysis of this phenomenon, revealing how changes in word order can enhance emphasis or clarity. For instance, inversion of zarf (adverbial) from the initial to the final position in a sentence provides a different nuance, enriching the variety of expressions in Arabic. Additionally, the deletion of existential particles like هناك is often used to simplify the surface structure without losing the core meaning, reflecting the efficiency principle in transformational theory (Baltin & Radford, 1990).

In modern linguistic studies, the application of transformational theory is not limited to syntactic analysis but also extends to our understanding of language acquisition and cognition. Research shows that children have an innate ability to grasp syntactic structures through minimal exposure, supporting Chomsky's Universal Grammar idea (Slabakova, 2021). In the context of Arabic, this theory's application opens up opportunities to develop more effective teaching methods by emphasizing sentence structure transformations to enhance grammatical understanding. This is relevant in learning Arabic as a second language, where understanding the deep and surface structures can accelerate the acquisition process (Glackin, 2011).

The syntactic analysis of Arabic through transformational theory also highlights challenges in parsing the language. The complex grammatical structure requires innovative approaches such as Tree-Adjoining Grammar (TAG) and Context-Free Grammar (CFG) to identify syntactic patterns with high accuracy (Ben Khelil et al., 2023). Furthermore, dialectal variation in Arabic adds another layer of complexity affecting sentence structure. Studies on the Najrani dialect, for example, show how syntactic transformations can differ significantly from Modern Standard Arabic (Mohamed, 2013). This understanding is crucial for developing linguistic analysis tools that can effectively handle the diversity of the Arabic language.

The contribution of transformational theory to Arabic studies extends beyond academia, impacting practical applications in language technology. Its implementation in Natural Language Processing (NLP) and language learning tools demonstrates how this theory can address challenges in Arabic text analysis and processing. For instance, using Lexical Functional Grammar (LFG) and Head-driven Phrase Structure Grammar (HPSG) has significantly improved the accuracy of morphological and syntactic analysis of Arabic (Alnajem et al., 2021). Thus, Chomsky's transformational theory not only enriches our theoretical understanding of Arabic but also paves the way for innovations in linguistic technology and language education.

RESEARCH METHOD

This research uses a descriptive qualitative approach to analyze Arabic sentence structures based on Noam Chomsky's transformational theory. Chomsky's Transformational Generative Grammar (TGG), which views language as an innate cognitive ability, is applied to understand the relationship between deep and surface structures in Arabic sentence constructions, including passive constructions, word order such as SVO, VSO, VOS, as well as structural case assignment in various dialects like Najrani Arabic (Ali Fakih & Al-Sharif, 2016). Linguistic transformations such as movement, substitution, and reduction of linguistic units are used to connect the deep structure with the actual sentence form, offering new insights into the syntactic complexity of Arabic (Mamedova, 2020). By applying Chomsky's syntactic rules, this research seeks to uncover the principles of Universal Grammar in the context of Arabic.

The data source in this study is the sentences found in the book *Bahan Ajar Al Arabiyah Lil Hayah Jilid 1*, compiled by the Team of Arabic Language Development Center (2014). This book was selected because it is commonly used in Arabic language education institutions in Indonesia, making it relevant as a representation of sentence structures in basic Arabic learning. The data collection techniques involved:

1. **Intensive Reading**

   The researcher thoroughly read the content of *Bahan Ajar Al Arabiyah Lil Hayah Jilid 1* to identify and select sentences that represent various Arabic sentence structure patterns, particularly the *Fi'il-Fa'il-Maf'ul* pattern in *fi'liyah sentences*.

2. **Sentence Categorization**

   The relevant sentences are classified based on their syntactic structure patterns, *jumlah fi'liyah lazim* and *jumlah fi'liyah muta'addi*. This classification aims to group the data according to the focus of the transformational theory analysis.

From the data collection techniques mentioned above, the researcher gathered the verbal sentences (fi'liyah) found in the book *Bahan Ajar Al Arabiyah Lil Hayah Jilid 1* as follows:

الجمل الفعلية

	لازم		متعدّي
١	أَسْتَيْقِظُ فِي السَّاعَةِ الرَّابِعَةِ صَبَاحًا	١	أَغْسِلُ الْمَلَابِسَ فِي الحَمَّامِ
٢	أَتَوَضَّأُ فِي البَيْتِ	٢	أَتَنَاوَلُ الغَذَاءَ مَعَ الأُسْرَةِ
٣	أَذْهَبُ إِلَى الجَامِعَةِ صَبَاحًا	٣	أَكْنُسُ البَيْتَ ثُمَّ أَغْسِلُ الأَطْبَاقَ
٤	أَقْرَأُ القُرْآنَ بَعْدَ الصَّلَاةِ	٤	أُشَاهِدُ التِّلْفَازَ فِي البَيْتِ
٥	أَنَامُ فِي غُرْفَةِ النَّوْمِ	٥	أُصَلِّيْ الصُّبْحَ جَمَاعَةً فِي الْمَسْجِدِ

The fi'liyah sentences were selected for analysis using Noam Chomsky's transformational theory due to their more complex syntactic structure compared to ismiyah sentences. This complexity includes key elements such as the subject, predicate, object, and adjuncts, which allow for a deeper analysis of the transformation process. Transformations in fi'liyah sentences involve various linguistic phenomena, such as changes in word order for emphasis, passive transformations that shift the focus of the sentence, and the omission of certain elements that are considered redundant or already understood from context. This aligns with the principles of transformational theory, which emphasizes the relationship between deep structure and surface structure in forming efficient and logical communication patterns. Transformation in communication is influenced by changes in media and technology, which alter how information is processed and shared, as seen in interactions between public authorities and citizens through digital transformation (Kuzmin & Matveev, 2023). In an organizational context, understanding the relationship between hierarchical structures and communication dynamics is key to effective management (Josephs et al., 2024). The flexibility of the fi'liyah structure in Arabic, which allows variations in subject-predicate order, reflects the language's ability to convey information efficiently, similar to how linguistic transformations shape communication patterns across domains (Baltin & Radford, 1990).

The choice of the pronoun "I" (أنا) as the focus of analysis is based on its explicitness and ease of recognition in identifying the subject in a sentence. In linguistic theory, the first-person pronoun provides a clearer analytical framework due to its fixed position and unambiguous meaning within the sentence context (Qori et al., 2024). This pronoun usage enables the researcher to explore the aspects of subjectivity in language, such as how the speaker expresses actions or states directly related to themselves. Transformations involving the pronoun "I" tend to be simpler and more consistent compared to other pronouns, thus facilitating the process of analyzing deep and surface structures. This is relevant to the transformational theory approach, where explicit elements like pronouns help

identify the syntactic relationships underlying sentence structure (Anbar, 2009). Chomsky's Transformational Generative Grammar (TGG) emphasizes the relationship between deep structure and surface structure, with the pronoun acting as a syntactic marker that facilitates the tracking of these relationships. By selecting the pronoun, the research can focus more on the linguistic transformation process without additional ambiguities, particularly in a language with a rich morphological system like Arabic (Junghanns & Szucsich, 2011)**.** This approach allows for a more in-depth syntactic analysis, revealing the important role of pronouns in linking deep and surface structures (Mamedova, 2020).

DATA ANALYSIS TECHNIQUE

The collected data were analyzed using the Transformational Grammar Theory proposed by Noam Chomsky (1965). The analytical procedure comprises the following stages:

1. **Identification of Deep and Surface Structures**

   The initial step involves identifying and mapping both the deep structure and the surface structure of each sentence in the dataset. The deep structure reflects the fundamental syntactic relationships underlying the sentence, such as subject, predicate, and object, independent of word order or applied transformations. In contrast, the surface structure represents the final, communicative form of the sentence as used in natural language contexts. This analysis is essential for understanding how core syntactic relationships can be modified to yield more efficient or communicatively relevant expressions (Peter & Chomsky, 1968).

2. **Application of Syntactic Transformations**

   Pada tahap ini, transformasi sintaksis diterapkan untuk melihat bagaimana elemen-elemen dalam struktur mendalam dimodifikasi menjadi struktur permukaan. Transformasi ini mencakup proses-proses seperti:

   a. **Inversion**: Altering the sequence of elements within a sentence to emphasize specific information or change the informational focus.

   b. **Deletion**: Omitting redundant elements that are inferable from context, such as the existential particle *hunāka* (هناك).

   - **S Substitution**: Replacing specific elements to simplify or clarify communication. This process offers insight into the flexibility and dynamism of Arabic sentence structures and illustrates how transformational grammar can be utilized to analyze syntactic phenomena (Baltin & Radford, 1990).

3. **Interpretation of Results**

Following the transformation processes, the resulting data are interpreted descriptively. The researcher identifies patterns of transformation, including word order variation, element omission, or simplification of compound sentences. The implications of these patterns for Arabic language pedagogy are also discussed, particularly regarding how transformational processes elucidate the relationship between deep and surface structures and enhance communicative efficiency (Ryding, 2005).

RESULTS AND DISCUSSION

Based on the analysis conducted on several samples of *jumlah fi'liyah* (verbal sentences), both *jumlah fi'liyah lāzimah* (intransitive verbal sentences) and *jumlah fi'liyah muta'addiyah* (transitive verbal sentences), the following discussion elaborates on the sentence transformations observed through the lens of Noam Chomsky's Transformational Grammar Theory. The first table categorizes the data according to the types of transformations identified in the *jumlah fi'liyah lāzimah*.

Tabel 1

Original Sentence	Deep Structure	Transformation	Surface Structure	Transformation Explanation
أَسْتَيْقِظُ فِي السَّاعَةِ الرَّابِعَةِ صَبَاحًا	هُنَاكَ أَنَا أَسْتَيْقِظُ فِي السَّاعَةِ الرَّابِعَةِ صَبَاحًا	Elimination (هُنَاكَ)	أَسْتَيْقِظُ فِي السَّاعَةِ الرَّابِعَةِ صَبَاحًا	The existential element هُنَاكَ is eliminated because it is considered already understood
أَتَوَضَّأُ فِي البَيْتِ	هُنَاكَ أَنَا أَتَوَضَّأُ فِي البَيْتِ	Elimination (هُنَاكَ)	أَتَوَضَّأُ فِي البَيْتِ	The existential element هُنَاكَ is removed to make the structure more efficient.
أَذْهَبُ إِلَى الجَامِعَةِ صَبَاحًا	أَنَا أَذْهَبُ إِلَى الجَامِعَةِ فِي الصَّبَاحِ	Inversi zarf (صَبَاحًا To the Rear)	أَذْهَبُ إِلَى الجَامِعَةِ صَبَاحًا	The temporal adverb is moved to the end position for emphasis on the action.

Original Sentence	Deep Structure	Transformation	Surface Structure	Transformation Explanation
أَقْرَأُ القُرْآنَ بَعْدَ الصَّلَاةِ	أَنَا أَقْرَأُ القُرْآنَ بَعْدَ أَنْ أُصَلِّيَ	Simplification of Compound Sentences	أَقْرَأُ القُرْآنَ بَعْدَ الصَّلَاةِ	The phrase بعد أن أصلي is simplified to بعد الصلاة for efficiency.
أَنَامُ فِي غُرْفَةِ النَّوْمِ	هناك أنا أنام في غرفة النوم	Elimination (هُنَاكَ)	أَنَامُ فِي غُرْفَةِ النَّوْمِ	The element هناك is omitted to simplify the structure.

Based on the table above, the transformations in Noam Chomsky's theory include several types, one of which is the elimination of existential elements such as هُنَاكَ. This element frequently appears in the deep structure to indicate existence, but in the surface structure, it is typically omitted because the existence information is already understood from the context. Additionally, there is the transformation of word order inversion (ترتيب الكلمات), which occurs in sentences with adverbs (zarf) (such as time or place adverbials). In this case, the position of the adverb can be altered to provide emphasis or enhance the efficiency of message delivery. Furthermore, the simplification of compound sentences is also an important transformation. In the deep structure, compound sentences often use elements like أن, but in the surface structure, these elements are simplified into a simpler phrase to facilitate more efficient communication.

The second table in this analysis aims to categorize the data based on the types of transformations that occur in Jumlah Fi'liyah Muta'addi (transitive verbal sentences). Each transformation is analyzed based on the type of change made to the deep structure to produce the resulting surface structure

Tabel 2

Original Sentence	Deep Structure	Transformation	Surface Structure	Transformation Explanation
أَغْسِلُ الْمَلَابِسَ فِي الحَمَّامِ	أَنَا أَغْسِلُ الْمَلَابِسَ هُنَاكَ فِي الحَمَّامِ	Elimination (هناك)	أَغْسِلُ الْمَلَابِسَ فِي الحَمَّامِ	The element هناك is omitted to simplify the surface structure
أَتَنَاوَلُ الغَذَاءَ مَعَ الأُسْرَةِ	أَنَا أَتَنَاوَلُ الغَذَاءَ مَعَ الأُسْرَةِ فِي مَكَانٍ مُعَيَّنٍ	Elimination of Place Adverb (في مكان معين)	أَتَنَاوَلُ الغَذَاءَ مَعَ الأُسْرَةِ	The place adverb is not necessary because the context is already clear.
أَكْنُسُ البَيْتَ ثُمَّ أَغْسِلُ الأَطْبَاقَ	أَنَا أَكْنُسُ البَيْتَ ثُمَّ أَنَا أَغْسِلُ الأَطْبَاقَ	Sentence Merging (ثمَّ)	أَكْنُسُ البَيْتَ ثُمَّ أَغْسِلُ الأَطْبَاقَ	Two actions are merged using the conjunction ثم without repeating the subject.
أُشَاهِدُ التِّلْفَازَ فِي البَيْتِ	أَنَا أُشَاهِدُ التِّلْفَازَ هُنَاكَ فِي البَيْتِ	Elimination (هناك)	أُشَاهِدُ التِّلْفَازَ فِي البَيْتِ	The existential element هناك is removed to make the structure more efficient.
أُصَلِّيْ الصُّبْحَ جَمَاعَةً فِي الْمَسْجِدِ	أَنَا أُصَلِّي الصُّبْحَ جَمَاعَةً هُنَاكَ فِي الْمَسْجِدِ	Elimination (هناك)	أُصَلِّيْ الصُّبْحَ جَمَاعَةً فِي الْمَسْجِدِ	The existential element is omitted, while the zarf remains for the place adverb.

In the second table, transformations in Noam Chomsky's theory include several significant changes in sentence structure. One of these is the elimination of existential elements such as هُنَاكَ, which frequently appear in the deep structure to indicate location or existence. However, in the surface structure, this element is typically omitted for efficiency, as the information is already understood from the context. Additionally, there is the transformation of sentence merging using conjunctions such as ثم. In the deep structure, each action usually has its own subject, but to simplify and avoid repetition, the sentences are merged with a conjunction in

the surface structure. Lastly, another transformation involves the elimination of redundant adverbials. Additional adverbials that do not provide new information, such as في مكان معين, are often omitted in the surface structure if their meaning is already clear from the context of the sentence, thus making the sentence more concise and easier to understand

CONCLUSION

This study concludes that the application of Noam Chomsky's transformational theory in the analysis of Arabic sentence structures successfully reveals the unique syntactic complexity inherent in the language. The transformational theory applied to **jumlah fi'liyah muta'addi** (transitive verbal sentences) involves several syntactic changes aimed at simplifying sentence structures and enhancing communication efficiency without losing the intended meaning. One of the main transformations in **jumlah fi'liyah muta'addi** is the elimination of redundant elements such as **هُنَاكَ**, which appear in the deep structure to indicate location or existence. However, in the surface structure, this element is omitted because its meaning is already clear from the context. Additionally, word order adjustments also occur, such as the merging of sentences using conjunctions like **ثم**, to avoid subject repetition and make the sentences more concise.

The key findings indicate that transformations such as the elimination of existential elements, word order inversion, and the simplification of compound sentences play a crucial role in forming an efficient and clear surface structure. Noam Chomsky's transformational theory allows us to understand how changes between the deep structure of sentences and the resulting surface structure occur in Arabic, making them more efficient. This analysis demonstrates that transformations not only simplify sentence elements but also contribute to the formation of sentences that are easier to understand and aligned with the communicative context.

The implications of these findings enrich our understanding of the relationship between deep and surface structures in Arabic, as well as extend the application of universal syntactic theory in the context of Semitic languages. It reflects the effective application of transformational theory in understanding structural changes in **jumlah fi'liyah muta'addi**. The contribution of this research lies in its innovative approach to combining Western linguistic theory with the analysis of Arabic, which has been underexplored thus far. Furthermore, this study opens the door for further research on the application of other syntactic theories in Arabic, such as Lexical Functional Grammar (LFG) or Head-driven Phrase Structure Grammar (HPSG), as well as analysis of the diverse Arabic dialects to enrich future comparative linguistic studies.

REFERENSI

Al-Ajrami, M. (2024). The diversity in Arabic dialects: Origins and variations. *Research Journal in Advanced Humanities*, *5*(2), 61–77. https://doi.org/10.58256/yyg49e18

Albtoush, M. A. R. A. (2020). The original order of arabic sentence structure according to Abd Alqader AL-Fassi Al- Fehri. *Dirasat: Human and Social Sciences*.

Ali Fakih, A. H., & Al-Sharif, H. A. (2016). An agree-based approach to structural case assignment in Najrani Arabic. *International Journal of Applied Linguistics and English Literature*. https://doi.org/10.7575/aiac.ijalel.v.5n.5p.119

Alnajem, S., Mutawa, A. M., AlMeer, H., & AlQemlas, A. (2021). A Prolog-based approach to Arabic syntax and semantics. *Journal of Engineering Research (Kuwait)*. https://doi.org/10.36909/jer.v9i3A.10129

Anbar, A. (2009). Generative transformational theory: Between competence and lignguistic performance. *Dirasat: Human and Social Sciences*, *32*.

Arifuddin, N., Arifuddin, N., Husna, A., & Azzamzami, M. F. S. (2022). *إستراتيجية حقيبة الإنجاز في تعليم الكتابة لدى طلبة البرنامج المكثف لتعليم اللغة العربية بجامعة مولانا مالك إبراهيم الإسلامية الحكومية مالانج*. ٤ , ١١٨–١٣٦. https://doi.org/https://doi.org/10.18860/lg.v4i2

Baltin, M., & Radford, A. (1990). Transformational Grammar: A First Course. *Language*. https://doi.org/10.2307/414616

Bassam, H., Asma, M., Nadim, O., & Abeer, T. (2014). Formal description of arabic syntactic structure in the framework of the government and binding theory. *Computacion y Sistemas*. https://doi.org/10.13053/CyS-18-3-2017

Ben Khelil, C., Othmane Zribi, C. Ben, Duchier, D., & Parmentier, Y. (2023). Parsing Arabic with a Semi-automatically Generated TAG: Dealing with Linguistic Phenomena. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*. https://doi.org/10.1007/978-3-031-23804-8_17

Daşkiran, Y. (2019). Relations between elements of sentence in the light of the syntactic connection. *Cumhuriyet Ilahiyat Dergisi*. https://doi.org/10.18505/cuid.543687

Deming, M., & Helong, T. (2024). *The Development of Chomskyan Generative Grammar: From the Standard Theory to the Minimalist Program*. Taylor & Francis. https://doi.org/10.4324/9781003494133

DiMeo, D., & Hassan, I. (2024). *The Structure of Arabic: A Workbook in the Ten Measures*. Taylor & Francis. https://doi.org/10.4324/9781003415817

Glackin, S. N. (2011). Universal grammar and the Baldwin effect: A hypothesis and some philosophical consequences. *Biology and Philosophy*. https://doi.org/10.1007/s10539-010-9225-3

Golumbia, D. (2010). Minimalism is functionalism. *Language Sciences*. https://doi.org/10.1016/j.langsci.2008.07.001

Hassan, T. (2013). Marginal phenomena in the grammar system, with supporting evidence from the Qur'an. *Journal of Qur'anic Studies*. https://doi.org/10.3366/jqs.2013.0108

Hırık, S. (2019). Movement in Turkish Syntax and the Effect of Movement on Transformation. *Turkiyat Mecmuasi*. https://doi.org/10.26650/iuturkiyat.651057

Ismail, S. Ben, Boukedi, S., & Haddar, K. (2017). Transformation system to generate derivational forms of an Arabic verb with HPSG. *Proceedings - 2017 International Conference on Engineering and MIS, ICEMIS 2017*. https://doi.org/10.1109/ICEMIS.2017.8272994

Josephs, N., Peng, S., & Crawford, F. W. (2024). Communication network dynamics in a large organizational hierarchy. *The Annals of Applied Statistics*, *18*(4), 3007–3023. https://doi.org/10.1214/24-AOAS1919

Junghanns, U., & Szucsich, L. (2011). Syntactic Structures and Morphological Information. In *Syntactic Structures and Morphological Information*. https://doi.org/10.1515/9783110904758

Karabulut, F. (2008). The typology of relative clause constructions in orkhon Turkic. *Bilig*.

Khamray, O. (2021). REALITY OF GRAMMATICAL PHENOMENA, TRUTH OF GRAMMATICAL MEANING AND "CORRECTNESS" OF GRAMMATICAL FORMS IN ARABIC. *Shidnij Svit*. https://doi.org/10.15407/orientw2021.04.115

Kuzmin, A. E., & Matveev, A. A. (2023). The Impact of Digital Transformation on the Process of Interaction of Public Authorities with Citizens. *Proceedings of the 2023 Communication Strategies in Digital Society Seminar 2023, ComSDS 2023*. https://doi.org/10.1109/ComSDS58064.2023.10130430

Ma, A. S., & Mishbahuddin, M. (2024). *النحت المعاصرة والاستفادة منه في تعليم المفردات اللغة العربية لغير الناطقين بها*. ٦ , ١–١٣ https://doi.org/10.18860/lg.v6i1.26638

Mamedova, K. H. (2020). THE METHOD OF TRANSFORMATION IN DESCRIPTIVE LINGUISTICS. *Visnyk Universitetu Imeni Alfreda Nobelya. Seriya: Filologichni Nauki*. https://doi.org/10.32342/2523-4463-2020-2-20-21

Mohamed, M. T. (2013). Accusative case-assignment in double object constructions in standard arabic: A minimalist approach. *Asian Social Science*. https://doi.org/10.5539/ass.v10n1p95

Mohammed, M. A., & Omar, N. (2011). Rule based shallow parser for Arabic language. *Journal of Computer Science*. https://doi.org/10.3844/jcssp.2011.1505.1514

Moubaiddin, A., Tuffaha, A., Hammo, B., & Obeid, N. (2013). Investigating the syntactic structure of Arabic sentences. *2013 1st International Conference on*

Communications, Signal Processing and Their Applications, ICCSPA 2013. https://doi.org/10.1109/ICCSPA.2013.6487275

Owens, J., & Embarki, M. (2023). Suffix Diversity and Arabic Language Phonological Typology. *Arabica*. https://doi.org/10.1163/15700585-20231680

Peter, H. W., & Chomsky, N. (1968). Aspects of the Theory of Syntax. *The Modern Language Review*. https://doi.org/10.2307/3722650

Qori, I., Mahmud, F., & Ibrahim, A. (2024). *تحليل الأخطاء النحوية والصرفية في القراءة لدى الطلبة وحلولها*. ٦٦ , ٢٤–٤١ https://doi.org/10.18860/lg.v6i2.29183

Rosyidah, I. (2019). Seksisme Bahasa Arab Dan Tantangan Pembelajaran Bahasa Arab. *Lugawiyyat*, *1*(1), 69–84. https://doi.org/10.18860/lg.v1i1.7882

Ryding, K. C. (2005). A reference Grammar of modern standard Arabic. In *A Reference Grammar of Modern Standard Arabic*. https://doi.org/10.1017/CBO9780511486975

Saputra, S., & Musthofa, T. (2022). Analisis Buku Teks Pelajaran Bahasa Arab SMA/SMK Muhammadiyah Pada Maharah Al-Kalam Sesuai Standar Common European Framework Of Reference (CEFR). *Lugawiyyat*, *4*(2), 81–97. https://doi.org/10.18860/lg.v4i2.17393

Sawaie, M. (2015). Fundamentals of Arabic grammar. In *Fundamentals of Arabic Grammar*. https://doi.org/10.4324/9781315881805

Slabakova, R. (2021). Second language acquisition. In *A Companion to Chomsky*. https://doi.org/10.1002/9781119598732.ch14