## **ARTICLES**

# The production of serialized adjectives by Jordanian EFL learners

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Abstract. This study investigates the production of serialized adjectives by Jordanian EFL learners, focusing on how the number and syntactic position of adjectives influence their ordering. Grounded in Scott's (2002) universal serialization framework, the study investigates learners' adherence to adjective ordering rules. Data were collected from 30 university students using two tests assessing attributive and predicative adjectives. The findings revealed that learners performed more accurately when producing sentences with two adjectives compared to three or four. Additionally, learners demonstrated better performance with attributive adjectives than with predicative ones. These findings question the notion of universal hierarchies in adjective ordering, emphasizing the role of cognitive constraints in shaping learners' performance. The study suggests shifting pedagogical approaches to prioritize fostering effective communication over strict adherence to syntactic hierarchies. Furthermore, language instructors are encouraged to develop activities focusing on gradual mastery of syntactic complexity and contextualized practice of adjective use.

**Keywords:** adjective ordering, attributive adjectives, Jordanian EFL learners, predicative adjectives.

Альнаджар Ая, Алтахайне Абдель Рахман. Утворення серійних прикметників у йорданських студентів, які вивчають англійську як іноземну.

Анотація. Це дослідження присвячено вивченню питання вживання серійних прикметників у мовленні йорданських студентів, які вивчають англійську мову як іноземну, з особливим акцентом на тому, як кількість і синтаксична позиція прикметників впливають на їхню послідовність. На основі універсальної моделі серійності Скотта (2002) дослідження вивчає дотримання студентами правил послідовності прикметників. Дані було зібрано від 30 студентів університету за допомогою двох тестів, що оцінювали

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атрибутивні та предикативні прикметники. Результати засвідчили, що студенти демонстрували точніші відповіді під час побудови речень з двома прикметниками, ніж з трьома або чотирма. Крім того, результати були кращими з прикметниками у функції означення, аніж із предикативними прикметниками. Одержані дані ставлять під сумнів поняття універсальної ієрархії в порядку прикметників, підкреслюючи роль когнітивних обмежень у формуванні студентських рішень. Автори пропонують змінити педагогічні підходи, щоб надати пріоритет ефективній комунікації над суворим дотриманням синтаксичних ієрархій. Крім того, викладачам мов рекомендують розробляти завдання, спрямовані на поступове оволодіння синтаксичною складністю та контекстуалізовану практику вживання прикметників.

**Ключові слова**: порядок прикметників, прикметники у функції означення, йорданські студенти, які вивчають англійську як іноземну мову, прикметник-станівник.

## Introduction

Adjective ordering or serialization is a key linguistic feature that has been extensively explored in modern linguistic theory (Cinque, 1994). Adjectives play a crucial role in language by enabling speakers and writers to specify attributes such as size, color, or quality which are essential for clear and effective communication (Algeo, 1987). In English, the arrangement of multiple adjectives within a sentence follows specific syntactic and semantic rules. These rules may pose challenges for EFL learners who are expected to apply the conventional ordering correctly. While prior studies (e.g., Amer, 2012; Alotaibi & Alotaibi, 2017; Al-Saidat et al., 2024; Alrashed, 2024) have investigated adjective ordering among EFL learners, many focus primarily on error analysis or L1 interference. This study addresses this gap by exploring how Jordanian EFL learners produce serialized adjectives in context, focusing on syntactic complexity and adjective position.

According to Swan (2005), adjectives are classified into two types: attributive adjectives which occur before the noun they modify (e.g., a beautiful house), and predicative adjectives which appear after linking verbs such as be, seem, or become (e.g., the house is beautiful). This study explores how the syntactic position of adjectives (attributive vs. predicative) and the number of adjectives affect their orderings.

Two major approaches explain universal adjective ordering, namely semantic and syntactic. Cinque (1994) argues that the semantic class of attributive adjectives determines their serialization. Later, Cinque (2010) proposes that adjective ordering follows an underlying syntactic structure. Similarly, Scott (2002) identifies a fixed adjective order grounded in universal grammar (UG), that combines semantic and syntactic principles. Scott (2002, p. 91) viewed adjectives "as specifiers of distinct functional projections that are intrinsically related to aspects of their semantic interpretation." The following is Scott's (2002) proposed universal serialization:

Determiner > Ordinal Number > Cardinal Number > Subjective Comment > Evidential > Size > Length > Height > Speed > Depth > Width > Weight > Temperature > Wetness > Age > Shape > Color > Nationality/Origin > Material > Compound Element > Noun Phrase (NP)

Based on this hierarchy, the correct order of adjectives in a noun phrase should be "a small brown wooden table." However, some EFL learners may struggle to apply this ordering correctly, resulting in non-standard adjective sequences such as "a wooden small brown table." For EFL learners, mastering serialized adjectives is essential not only for linguistic accuracy but also for achieving native-like fluency. This research not only investigates learners' production but also questions the universality of established adjective ordering hierarchies in light of cognitive constraints. This study bridges the gap between theoretical frameworks, such as Scott's (2002) universal serialization, and the practical challenges faced by learners, contributing both to the field of second language acquisition. Therefore, this study addresses the following questions:

- 1. To what extent do Jordanian EFL learners accurately produce serialized adjectives in their written output?
- 2. To what extent do the number and syntactic position of adjectives influence their ordering?

#### **Previous Studies**

Several researchers have explored the acquisition and production of serialized adjectives. To contextualize this topic within the existing body of literature, a review of previous studies concerning both the acquisition and production of serialized adjectives, particularly in the context of EFL learners is warranted.

Amer (2012) examined how 65 female EFL students at the Islamic University of Gaza (IUG) perceive the position and order of English adjectives. The study aimed to pinpoint the areas where students face challenges by analyzing the errors they made regarding adjective position and order. The findings revealed that participants encountered significant difficulties in constructing sentences with multiple adjectives. These challenges were attributed to structural differences between English and Arabic in terms of adjective position and order. Consequently, the negative interference from the students' L1 played a key role in the serious errors they committed.

Alotaibi and Alotaibi (2017) investigated the awareness of 80 Kuwaiti EFL learners regarding the prenominal adjective ordering in English (40 advanced and 40 intermediate). A prenominal adjective ordering test was administered to assess participants' ability to produce the correct order of adjectives. The findings

indicated that Kuwaiti EFL learners are not fully aware of this grammatical system as evidenced by a total mean score of 48.75%. Furthermore, a t-test analysis demonstrates that the participants' English proficiency level significantly influences their performance. Advanced learners scored 65% whereas intermediate learners scored 32.5% demonstrating a statistically significant difference. As for the types of errors observed, the most prominent ones were attributed to negative transfer from the participants' L1.

Albaqami (2023) explored the relationship between age and proficiency in mastering the target language among early and late Arabic-English bilinguals. The study specifically examined how these bilinguals perceive the correct ordering of multiple consecutive adjectives in English using a Speeded Acceptability judgment task. 16 participants (8 early bilinguals and 8 late bilinguals) residing in the United Kingdom were asked to indicate their preferences for the ordering of multiple adjective strings. The results revealed that early bilinguals significantly outperformed late bilinguals in demonstrating native-like adjective ordering preferences. This study highlights the critical role of early exposure in facilitating mastery of the target language system and accelerating L2 acquisition.

Alghazo and Jarrah (2023) investigated adjective ordering preferences in Jordanian Arabic (JA) grammar through acceptability judgment tasks. Their findings, based on 16 experiments with 97 native JA speakers, provided evidence against the presence of unmarked linear serializations of stacked, non-coordinated adjectives in JA. Two key factors were identified as influencing adjective acceptability. The first factor was the number of stacked adjectives. While all word order patterns were fully acceptable with two stacked adjectives, constructions involving three or more stacked adjectives were significantly degraded. The study indicated that this degradation is attributed to third-factor effects, particularly working memory limitations and processing load. The second factor was related to the syntactic position of adjectives. Attributive adjectives were significantly more acceptable than predicative ones, though both can be freely stacked in JA.

Al-Saidat et al. (2024) examined how Jordanian EFL learners acquire the order of English prenominal adjectives. To achieve this objective, the researchers administered a test based on Svatko's (1979) proposed order of prenominal adjectives. The study involved 42 Jordanian advanced EFL undergraduate students at Al-Hussein Bin Talal University in Jordan. The findings of this study revealed that participants faced significant challenges in using prenominal adjectives, particularly as the complexity of adjective sequences increased. Thus, the overall accuracy rate across all categories was 35%. Additionally, the study demonstrated that intralingual errors were more prevalent than interlingual

errors, accounting for 77% of the total errors. This study differs from the one reported here in two key respects. First, it was only concerned with the order of prenominal adjectives. Second, it was based on a multiple-choice test that includes a small number of items (i.e., 10 sentences).

Alrashed (2024) explored the impact of first language (L1) transfer on adjective ordering among Saudi EFL learners. The study hypothesized that shared adjective ordering conventions between Arabic and English would positively influence learners' accuracy in producing serialized adjectives in English. Using a sample of 36 learners with high and low proficiency levels, the study examined their performance on three adjective combinations: non-absolute + absolute (NA), absolute + absolute (AA), and non-absolute + non-absolute (NN). The findings revealed superior performance on the NA combinations common to both languages and significant proficiency-based differences (i.e., high-proficiency learners outperforming their lower-proficiency peers across all combinations). It is obvious that this study primarily focuses on the influence of L1 transfer and proficiency level on the production of serialized adjectives.

In a recent study, Amusan (2025) investigated how non-native English speakers, specifically those whose first languages have different noun phrase syntactic structures, acquire and arrange English adjectives. The study involved 37 participants: 5 native English speakers serving as a control group and 32 non-native English users from Hindi, Nepali, Yoruba, and Igbo linguistic backgrounds. The findings revealed that learners face challenges when combining semantically close adjectives (e.g., participle and color adjectives) and when dealing with adjectives absent in their native languages. The study underscores the need for flexible teaching approaches to assist learners in mastering adjectival order.

While Different studies were concerned with adjective ordering by EFL learners, there exist few research attempts that have tackled adjective ordering by Jordanian EFL learners. Therefore, the study reported here attempts to bridge this gap by investigating the production of serialized adjectives by Jordanian university EFL learners.

The following section presents the methodology adopted in the current study.

# Methodology

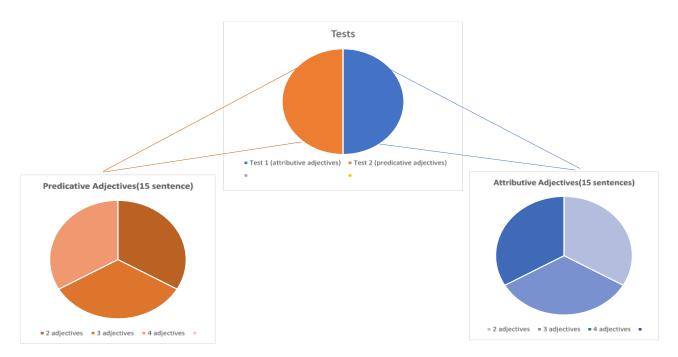
#### **Data Collection Procedure**

To achieve the objective of this study, two tests were designed, each incorporating sentences with two or more adjectives. The use of two separate tests (one for attributive adjectives and one for predicative) was chosen to

systematically investigate the influence of syntactic position on learners' ability to produce serialized adjectives. This division was also done to minimize potential confounding variables that could arise from mixing both types within a single test.

Each test consisted of 15 sentences with 5 sentences allocated to each category (2, 3, and 4 adjectives). This number of test items is comparable to prior research in the field (e.g., Albaqami, 2023; Al-Saidat et al., 2024). 15 sentences per test were chosen to strike a balance between obtaining reliable data and minimizing participant fatigue since longer tests may lead to reduced focus and inconsistent responses. Additionally, the sentences were contextualized (I.e., they appear in meaningful sentences). It is worth noting that all sentences containing predicative adjectives featured the verb be in either its present or past tense. Figure 1 outlines the division of these tests.

Figure 1
The Distribution and Components of the Two Tests



To ensure the content validity of the tests, the researchers consulted two experienced professors from the University of Jordan. The first is an assistant professor of linguistics at the Faculty of Foreign Languages, and the second is an associate professor of curriculum and instruction at the Faculty of Educational Sciences. They reviewed the test items for relevance, clarity, and alignment with the research questions. Furthermore, the test items were piloted with a small group of students before the main study to ensure that they were neither too difficult nor too easy for participants.

The tests were printed and administered to 30 EFL undergraduate students majoring in Applied English at The University of Jordan. The participants' mean age was 21 years old. They were recruited through direct coordination with faculty members, and testing took place in the designated on-campus classroom. The sole variable considered in this study was English proficiency, which ranged from intermediate to advanced (see Alotaibi & Alotaibi, 2017).

Participants' English proficiency levels were determined based on their cumulative grade point average (GPA) in English courses at the University of Jordan. Students with a GPA of 3.5 or higher out of 4.0 were classified as advanced, while those with a GPA between 3.0 and 3.49 were classified as intermediate. To ensure accuracy, academic records were reviewed as part of the classification process. Participants were instructed to carefully read each sentence and reorder the given adjectives. They were allotted one hour to complete both tests. In adherence to ethical guidelines, permission to conduct this study was obtained from the University of Jordan, ensuring adherence to ethical and institutional guidelines. Additionally, participants were informed that their involvement was entirely voluntary and that their decision to participate or withdraw at any time would not have any consequences in any way.

## Data analysis procedure

To assess whether participants could correctly position serialized adjectives, their responses to sentences with attributive and predicative adjectives were analyzed, focusing on the number and relative order of the adjectives. The analysis included calculating the means, standard deviation, and percentages of the participants' responses. The results of the statistical analysis together with their interpretations are presented and discussed in the following section.

## **Results and Discussion**

## Quantitative analysis

To address the first research question which investigates the extent to which Jordanian EFL learners accurately produce serialized adjectives in writing, the means and standard deviations of the students' scores across both tests were calculated. The results are presented in Table 1.

Table 1
Means and Standard Deviations for Serialized Adjectives Accuracy;
test1=attributive; test2=predicative

Tests	Min	Max	Mean	SD	Level
test1_2	O	5	3.97	.765	High
test1_3	O	5	2.37	1.033	High
test1_4	0	5	1.60	1.404	Low
total_test1	O	15	7.93	2.258	Moderate
test2_2	O	5	3.60	1.163	High
test2_3	O	5	1.03	.890	Low
test2_4	0	5	.83	.950	Low
total_test2	O	15	5.47	2.300	Moderate

Table 1 shows that learners performed at a moderate level overall with higher accuracy observed in test 1 (attributive adjectives; mean = 7.93) compared to test 2 (predicative adjectives; mean = 5.47). This means that Jordanian EFL learners are not fully aware of the order of serialized adjectives in English. Notably, learners demonstrated the highest accuracy in two-adjective sentences, achieving mean scores of 3.97 in test 1 and 3.60 in test 2. However, performance declined significantly in three-adjective sentences (means: 2.37 in test 1 and 1.03 in test 2) and four-adjective sentences (means: 1.60 in test 1 and 0.83 in test 2). The following examples show how learners deviated from the expected order:

## **Example 1: Three Adjectives**

- (a) Correct Adjective Order
- "I bought a beautiful fast Chinese car." ( 🗸 )
- (b) incorrect Adjective Serialization
- "I bought a Fast beautiful Chinese car." (X)

## Example 2: Four Adjectives

- (a) Correct Adjective Order
- "I saw a cute small old white dog." ( <
- (b) incorrect Adjective Serialization
- "I saw a Small white old cute dog." (X)

The second research question is concerned with whether the students' performance is influenced due to both the number and syntactic position of adjectives. First, to examine the effect of the number of adjectives, a paired t-test (which compares the means of two measurements taken from the same individual, object, or related units) was conducted. The results are presented in Table 2.

Table 2
The Influence of Number of Adjectives

Test	Number of Adjectives	Mean	SD	T	df	Sig.
	2	7.57	1.591	12.042	29	.000
	3	3.40	1.303			
Total	2	7.57	1.591	15.661	29	.000
Total	4	2.43	1.775			
	3	3.40	1.303	3.209	29	.003
	4	2.43	1.775			
	2	3.97	.765	6.470	29	.000
	3	2.37	1.033			
Attributive	2	3.97	.765	9.091	29	.000
Attributive	4	1.60	1.404			
	3	2.37	1.033	3.039	29	.005
	4	1.60	1.404			
	2	3.60	1.163	11.496	29	.000
	3	1.03	.890			
Predicative	2	3.60	1.163	13.350	29	.000
1 Teurcative	4	.83	.950			
	3	1.03	.890	1.063	29	.297
	4	.83	.950			

Table 2 demonstrates that accuracy decreases as the number of adjectives increases. Learners achieved the highest scores on two-adjective sentences with statistically significant differences compared to three-adjective and four-adjective sentences ( $\alpha$ <.05). In test 1 (attributive adjectives), learners performed best on sentences containing two adjectives, followed by sentences containing three adjectives, with the lowest performance observed on sentences containing four adjectives. Similarly, in test 2 (predicative adjectives), learners' performance was significantly better on two-adjective sentences compared to three and four-adjective sentences. However, no statistically significant differences were found between three-adjective and four-adjective sentences in test 2. These findings suggest that sentence complexity, as measured by the number of adjectives, significantly affects learners' accuracy in producing serialized adjectives.

Second, to investigate the influence of syntactic position on the ordering of adjectives, a paired t-test was also conducted. The results are displayed in Table 3.

Table 3: The Influence of Syntactic Position; A= attributive; P= predicative

Test	Position	Mean	SD	T	df	Sig.
Total	P	5.47	2.300	-4.721	29	.000
	A	7.93	2.258			
2 adjectives	P	3.60	1.163	-1.733	29	.094
2 adjectives	A	3.97	.765			
3 adjectives	P	1.03	.890	-5.135	29	.000
	A	2.37	1.033			
4 adjectives	P	.83	.950	-2.605	29	.014
4 adjectives	A	1.60	1.404			

Table 3 highlights the impact of syntactic position (attributive vs. predicative) on the ordering of serialized adjectives. The results indicate Statistically significant differences in favor of attributive adjectives (t=-4.721,  $\alpha$ <.05). This pattern is consistent across sentences with three and four adjectives (t=-5.135, -2.605;  $\alpha$ <.05), suggesting that syntactic position plays a crucial role in learners' ability to order adjectives accurately. In contrast, no significant differences were observed for sentences with two adjectives (t=-1.733,  $\alpha$ >.05), implying that the influence of syntactic position diminishes in less complex sentence structures.

## Discussion

In the face of the findings presented above, Jordanian EFL learners evidentially do not strictly adhere to Scott's (2002) adjectival serialization in their production. This is more evident in their ordering of sentences containing three and four adjectives. Apart from arguing that Jordanian EFL learners are not fully aware of the universal serialization of adjectives, it could be that all possible orderings of adjectives are acceptable for them. This might align with the findings of Alghazo and Jarrah (2023) who asserted that Jordanian Arabic (JA) does not prioritize a specific order for stacked adjectives. Similarly, Leivada (2022) showed that adjective orders deviating from the so-called universal hierarchy are still highly acceptable to participants. The study highlights that adjective ordering adapts to context-specific communicative needs, allowing speakers to reorder adjectives to emphasize specific features or resolve ambiguities. This finding may also support researchers who criticize the fixed adjective hierarchy (see Bouchard, 2002; Bošković, 2005).

In light of this, it can be suggested that Jordanians are less likely to adhere to adjective hierarchies in either their first or second languages. In other words, if the students' production does not conform to the hierarchy, it should not be regarded as an error as the intended meaning is still effectively communicated. This perspective is not in line with Albaqami (2023) who argued that unfollowing the typical order of adjectives makes utterances sound weird. This may not also align with previous studies that focused on the errors that EFL learners make in ordering adjectives (e.g., Amer, 2012; Alotaibi & Alotaibi, 2017; Al-Saidat et al., 2024).

Although recursion is a fundamental property of language, its application is often constrained by extralinguistic factors, collectively referred to as third-factor effects (Chomsky, 2005). These include cognitive limitations which constrain the free application of recursion. Chomsky (2005) asserts that language (Language with a capital L) is shaped by the interaction of three factors. The third factor encompasses cognitive principles shared across other cognitive systems. These principles are not exclusive to the language faculty, making cognitive constraints central to understanding linguistic performance among EFL learners. According to Chomsky (2005, p. 9), "the third factor subsumes two kinds of principles: (a) data processing, and (b) architectural/computational-developmental constraints."

The findings of this study demonstrated that the number of adjectives significantly impacts Jordanian EFL learners' ability to produce serialized adjectives. Specifically, learners performed more accurately when producing sentences with two adjectives compared to sentences with three or four. This finding reflects the influence of the third-factor effects (e.g., memory capacity and processing load) which influence learners' ability to produce syntactically complex structures. Chomsky (2011) emphasized that third-factor considerations of computational complexity play a crucial role in deriving the optimal forms of language. This decline in performance with increased complexity is also consistent with Baddeley and Hitch's (1974 and Baddeley's (2007) working memory model, which posits that syntactically complex structures require greater memory resources. That is, complex adjective structures appear to challenge participants' working memory capacities. This finding is further consistent with Alghazo and Jarrah (2023) who indicated that working memory and processing load influenced participants' acceptability rates which decline as the number of stacked adjectives per construction increases. Other researchers have also reported similar results (e.g., Al-Saidat et al., 2024; Almalki, 2024; Alghannam, 2024). For instance, Al-Saidat et al. (2024) found that Jordanian EFL learners struggled with prenominal adjectives as the complexity of adjective sequences increased.

Apart from the number of adjectives, the syntactic position (attributive vs. predicative) emerged as a significant factor influencing learners' performance. Learners demonstrated higher accuracy with attributive adjectives, which can be attributed to differences in processing demands. Attributive adjectives are structurally simpler, being processed within the same clause as the noun they modify. This aligns with Gibson's (1998, 2000) Dependency Locality Theory which suggests that the syntactic complexity of sentences increases with the length of syntactic dependencies. This theory posits that sentence complexity can be explained by two main factors: storage cost and integration cost. Storage cost refers to the cognitive effort required to retain earlier words in memory, while integration cost involves the effort needed to connect these stored words. Therefore, longer dependency lengths require more effort, making it more challenging to process sentences. This also concords with Hawkins' (2004) Efficiency and Complexity in Grammars framework, which suggests that shorter distances between syntactic elements (e.g., adjectives and the nouns they modify) enhance processing efficiency.

These findings can also be viewed through the lens of Chomsky's (2005) concept of third-factor effects favoring minimal computations. This perspective supports the observed preference for simpler syntactic structures such as attributive adjectives which are less demanding to process than predicative adjectives. In this respect, O'Grady (2021) emphasizes that processing across clausal structures, such as predicative adjectives is more cognitively demanding compared to intra-clausal structures, such as attributive adjectives. Predicative adjectives often require integration across clausal boundaries, involving elements such as the subject, the linking verb, and the predicate, which increases dependency length. These differences in processing demands provide a plausible explanation for why learners performed better with attributive adjectives in this study.

## **Conclusion and Recommendations**

This study examined how Jordanian EFL learners produce serialized adjectives, with a focus on the influence of adjective number and syntactic position on their ordering. The findings revealed that learners struggled with accurately producing serialized adjectives, especially in sentences containing three or four adjectives, reflecting the impact of increased syntactic complexity. Furthermore, learners performed better with attributive adjectives than with predicative ones. These findings may be attributed to cognitive factors such as memory limitations and processing demands.

These results may challenge the universality of Scott's (2002) adjective ordering hierarchy, suggesting that Jordanian EFL learners prioritize communicative clarity over strict adherence to syntactic rules. Such deviations, therefore, should not be regarded as errors but as adaptations to cognitive constraints. This perspective highlights the need to shift pedagogical approaches toward fostering communicative competence rather than enforcing rigid syntactic rules. Language instructors are encouraged to design gradual, scaffolded activities that introduce serialized adjectives in simpler contexts before increasing syntactic complexity. Contextualized exercises should also be integrated into L2 teaching curricula to enhance learners' practical application of adjective ordering.

While this study offers valuable insights into specific findings, certain limitations must be acknowledged. The relatively small sample size may affect the generalizability of the results, and conducting the research within a single institution could also limit the diversity of perspectives. To address these constraints, future research should aim to include larger, more diverse populations across multiple institutions. Additionally, employing longitudinal designs and varied methodologies can enhance the robustness and applicability of the findings.

These findings contribute to a deeper understanding of how cognitive constraints influence linguistic performance, offering valuable implications for second language teaching and learning. Future studies should explore the role of early exposure to serialized adjectives in shaping learners' mastery. Moreover, further research could investigate how learners from different linguistic backgrounds tackle serialized adjective production.

## **Disclosure Statement**

The authors reported no potential conflict of interests.

## References

Albaqami, R. (2023). Mastering English Multiple Adjectives Ordering among Early versus Late Second Language Speakers: Evidence from Arabic-English Bilinguals. International Journal of Language and Literary Studies, 5(2), 343-367. <a href="https://doi.org/10.36892/ijlls.v5i2.1357">https://doi.org/10.36892/ijlls.v5i2.1357</a>

Algeo, J. (1987). A Comprehensive Grammar of the English Language. By Randolph Quirk, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik. London: Longman. 1985. x+ 1779. Journal of English Linguistics, 20(1), 122-136. https://doi.org/10.1177/007542428702000108

- Alghannam, M. S. M. (2024). Factors affecting difficulty of English pre-nominal adjective order for Saudi learners. Forum for Linguistic Studies, 6(5), 925–942. https://doi.org/10.30564/fls.v6i5.6825
- Alghazo, S., & Jarrah, M. (2023). No Adjective Ordering Preferences in Jordanian Arabic Grammar. Journal of Psycholinguistic Research, 52(5), 1633-1667. <a href="https://doi.org/10.1007/s10936-023-09965-0">https://doi.org/10.1007/s10936-023-09965-0</a>
- Almalki, H. (2024). An Assessment of Acquiring English Attributive Adjective Order by Saudi University Freshmen and Senior EFL Students. رسالة المشرق (Al-Mashriq Journal), 39(4), 3-23. <a href="https://doi.org/10.21608/rmshreq.2024.403272">https://doi.org/10.21608/rmshreq.2024.403272</a>
- Alotaibi, M. A., & Alotaibi, A. M. (2017). On the acquisition of the prenominal adjective order by Kuwaiti EFL learners. Advances in language and literary studies, 8(1), 1-8. <a href="https://doi.org/10.7575/AIAC.ALLS.V.8N.1P.1">https://doi.org/10.7575/AIAC.ALLS.V.8N.1P.1</a>
- Alrashed, M. A. (2024). The Impact of L1 Transfer on Learning English Adjective Order by Saudi EFL Learners. Journal of Language Teaching and Research, 15(6), 1845-1853. <a href="https://doi.org/10.17507/jltr.1506.10">https://doi.org/10.17507/jltr.1506.10</a>
- Al-Saidat, E. M., Al-Shalabi, F. A., & Amer, F. H. (2024). Acquisition of prenominal adjective order by Jordanian EFL learners. *Jurnal Cakrawala Pendidikan*, 43(3), 534–545. https://doi.org/10.21831/cp.v43i3.76330
- Amer, W. M. (2012). An investigation into the differences between English and Arabic position and order of adjectives: A contrastive study with pedagogical implications. Albahr Al-Ahmer University Journal, 5, 205-229.
- Amusan, K. V. (2025). The acquisitional challenges of adjective order among non-native learners of English. International Journal of Research Studies in Education, 14(1), 63-74. <a href="https://doi.org/10.5861/ijrse.2025.25002">https://doi.org/10.5861/ijrse.2025.25002</a>.
- Baddeley, A. (2007). Working memory, thought, and action. Oxford Academic. https://doi.org/10.1093/acprof:oso/9780198528012.001.0001
- Baddeley, A. D., & Hitch, G. (1974). Working memory. In G. A. Bower (Ed.), Psychology of learning and motivation, Vol. 8, (pp. 47–89). Academic Press. https://doi.org/10.1016/S0079-7421(08)60452-1
- Bošković, Ž. (2005). On the locality of left branch extraction and the structure of NP. Studia Linguistica, 59(1), 1–45.  $\frac{\text{https://doi.org/10.1111/j.1467-9582.2005.00118.x}}{\text{https://doi.org/10.1111/j.1467-9582.2005.00118.x}}$
- Bouchard, D. (2002). Adjectives, number, and interfaces: Why languages vary. Elsevier.
- Chomsky, N. (2005). Three factors in language design. Linguistic Inquiry, 36(1), 1–22.
- Chomsky, N. (2011). Language and other cognitive systems. What is special about language? Language Learning and Development, 7(4), 263–278.
- Cinque, G. (1994). On the evidence for partial N-movement in the romance DP. In R. S. Kayne, G. Cinque, J. Koster, J. Y. Pollock, L. Rizzi, & R. Zanuttini (Eds.), Paths towards universal grammar: Studies in honor of Richard S. Kayne. (pp. 85–110). Georgetown University Press. <a href="https://doi.org/10.1017/CBO9780511554261.011">https://doi.org/10.1017/CBO9780511554261.011</a>
- Cinque, G. (2010). The syntax of adjectives: A comparative study. MIT Press. <a href="https://doi.org/10.7551/mitpress/9780262014168.001.0001">https://doi.org/10.7551/mitpress/9780262014168.001.0001</a>
- Gibson, E. (1998). Linguistic complexity: Locality of syntactic dependencies. Cognition, 68(1), 1-76. <a href="https://doi.org/10.1016/s0010-0277(98)00034-1">https://doi.org/10.1016/s0010-0277(98)00034-1</a>
- Gibson, E. (2000). The dependency locality theory: A distance-based theory of linguistic complexity. In A. Marantz, Y. Miyashita, & W. O'Neil (Eds.), *Image, language, brain:*Papers from the first mind articulation project symposium (pp. 94–126). The MIT Press.
- Hawkins, J. A. (2004). Efficiency and complexity in grammars. Oxford University Press.

- Leivada, E. (2022). Determining the cognitive biases behind a viral linguistic universal: the order of multiple adjectives. Humanities and Social Sciences Communications, 9, 436. <a href="https://doi.org/10.1057/s41599-022-01440-w">https://doi.org/10.1057/s41599-022-01440-w</a>
- O'Grady, W. (2021). The natural syntax of local coreference. Frontiers in Psychology, 12, 660296. <a href="https://doi.org/10.3389/fpsyg.2021.660296">https://doi.org/10.3389/fpsyg.2021.660296</a>
- Scott, G. J. (2002). Stacked adjectival modification. Functional Structure in DP and IP: The Cartography of Syntactic Structures, 1, 91-122. <a href="https://doi.org/10.1073/pnas.1903403116">https://doi.org/10.1073/pnas.1903403116</a> Swan, M. (2005). Practical English Usage 3rd edition. Oxford University Press.

# Appendix A

### **Attributive Adjectives**

#### Test 1

The following sentences contain multiple adjectives. Please read each sentence carefully and decide whether the adjectives (provided in brackets) are correctly ordered. If they are not, reorder them to create correct sentences.

1.	I bought a (long/Indian) shirt.	
	The correct answer: I bought a	shirt.
2.	I saw a (big/beautiful) house. The correct answer: I saw a	_ house.
3.	I found a (red/small) car. The correct answer: I found a	car.
4.	I bought a (wide/wooden) table. The correct answer: I bought a	
5.	I visited a (wide/deep) river. The correct answer: I visited a	river.
6.	I bought a (small/wooden/ brown) table. The correct answer: I bought a	table.
7.	I bought a (fast/Chinese/beautiful) car. The correct answer: I bought a	car.
8.	I found a (big/glass/old) vase. The correct answer: I found a	vase.
9.	I bought a (blue/new/square) clock. The correct answer: I bought a	clock.

10.	I visited a (gray/Roman/stone) building.	
	The correct answer: I visited a	building.
11	I bought a (beautiful/wide/fastJapanese) car.	
11,	The correct answer: I bought a	car
	The correct unswer. I bought u	cur.
12.	I bought (red/Turkish/big/cotton) shirts.	
	The correct answer: I bought	shirts.
13.	I found a (round/wooden/small/blue) box.	
	The correct answer: I found a	box.
14.	I ate a (delicious/small/fresh/Turkish) cake.	1
	The correct answer: I ate a	cake.
15	I saw a cute/old/white/small) dog.	
15.	The correct answer: I saw a	dog.
	Appendix B	
Predi	cative Adjectives	
Test 2		
decide	ollowing sentences contain multiple adjectives. Please read each see whether the adjectives (provided in brackets) are correctly order them to create correct sentences.	
1.	The explanation was (long/useful).	
	The correct answer: The explanation was	
2	The house was (high/pice)	
2.	The house was (high/nice). The correct answer: The house was	
	The correct answer. The nodec was	
3.	The car is (red/metal).	
٠,	The correct answer: The car is	
4.	The sea is (deep/big).	
	The correct answer: The sea is	<del></del>
_	The man was (brown /old)	
5.	The man was (brown/old). The correct answer: The man was	
	THE COTTECT diswet. The ilidii was	<del></del>
6.	The house was (warm/big/high).	
	The correct answer: The house was	

7.	The tower was (high/white/old). The correct answer: The tower was	
8.	The sea is (blue/wide/deep). The correct answer: The sea is	
9.	The explanation is (useful/fast/long). The correct answer: The explanation was	
10.	The table is (wooden/rectangular/Italian). The correct answer: The table is	
11.	The house is (large/white/old/rectangular). The correct answer: The house is	
12.	The car is (Chinese/red/fast/new). The correct answer: The car is	
13.	The mountain is (tall/cold/ancient/rocky). The correct answer: The mountain is	
14.	The dog was (friendly/black/old/small). The correct answer: The dog was	
15.	The cake was (delicious/chocolate/round/fresh). The correct answer: The cake was	