The Adverb Hierarchy in Jordanian Arabic: A Cinquean Approach

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ABSTRACT

This study explores the adverb/adverbial hierarchy in Jordanian Arabic (JA), appealing to Cinque’s (1999) Universal Adverb Hierarchy (UAH), a cross-linguistically attested model of the structural placement of adverbs/adverbials. The study examines the extent to which JA relevant data is amenable to the UAH. The main findings generally corroborate the presence of the UAH in JA, supplying empirical evidence in favor of the validity of the UAH. More specifically, the study shows that some adverbs/adverbials (belonging to a specific semantic category) should occur to the left of (and hence c-commanding (cf. Kayne 1994)) other adverbs/adverbials that belong to a different semantic category, exactly in the same fashion that the UAH expects. Another important finding of this study is that the categorical status of an adverb vs. an adverbial is immaterial to the UAH, implying for an underlying structure of the UAH which is not affected by the type of the category (i.e. an adverb vs. an adverbial) that fills the designated Specifier positions of the UAH.

Keywords: Universal Adverb Hierarchy (UAH), negation, tense, Arabic.

1. Introduction

In contrast to other grammatical categories, adverbs had relatively received a little attention from researchers, given their syntactic behavior (i.e., being adjuncts which are not significant, e.g., to decide argument realization). Jackendoff (1972) mentions that “adverbs are the least studied and most maligned part of speech. This is to some extent understandable, considering the variety of semantic and syntactic roles adverbs play in English” (p. 47). In recent years, adverbs have increasingly become one important aspect of syntactic (and semantic) investigation. The anatomy of adverbs and their placement and relationship to other sentential elements (especially verbs) have been thoroughly explored (see, e.g., Baker 1981; Bellert 1977; Ernst 1984, 2002; Costa 1996; Alexiadou 1997; Cinque 1999; Haider 2000; Cinque and Rizzi 2008).

There are two main approaches, among many others, that explore the distribution of adverbs in natural languages. The first approach is Cinque’s (1999) Universal Adverb Hierarchy (UAH) which is a syntax-based theory which argues that adverbs are distributed in a sentence according to a specific hierarchy that is built-in (i.e. part of Universal Grammar, UG; cf. Chomsky 1957); any deviation from this hierarchy (e.g., an adverb which is expected to occur in a high position in the clause, but appears very low, nonetheless) is accounted for through movement (of either other sentential elements or even the adverb itself). On the other hand, the second approach, which is a semantics-based theory, proposes that the structural positions of adverbs inside the sentence are semantically forced, due to scope and other semantic aspects (Ernst 2002). In this approach, adverbs occur in a fixed order because of their interaction first with meaning of each other and second with sentential heads including Tense, Aspect, etc. This implies that there is no UG-given procedure through which adverbs are structurally ordered. However, this approach has been criticized due to its few typological gains and weaker force to account for the stark similarities that hold across languages with respect to adverbs' hierarchy. Additionally, as Cinque (2004) mentions, this approach 'falls short [...] of accounting for certain

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1 We are very much grateful to the anonymous reviewer of DIRASAT, whose remarks and comments considerably enhanced the quality of the paper. The following symbols are used in this study. 1, 2, and 3 = Person; ACC = Accusative; DEF = Definite; F = Feminine; GEN = Genitive; JA = Jordanian Arabic (JA); IND = Indicative Mood; M = Masculine; MSA = Modern Standard Arabic; NOM = nominative; PL = Plural; SG = Singular; UAE = Universal Adverb Hierarchy.
crucial properties of adverbial syntax" (p. 684). In this paper, the former approach, the UAH is used as the theoretical framework and a departure point of this study.2

The UAH has received much interest from researchers who work on different languages. The UAH is widely considered a successful model of adverbs’ distribution (see Haegeman 2012, Wiltchko 2014, Alexiadou, et al. 2015). The UAH is based on one main assumption, namely Adverb Phrases (AdvPs) have a universal rigid order. Each adverb occupies the specifier (Spec) position of a functional projection whose c-commanding relations with other functional (adverb-related) projections is fixed and invariant across languages. The UAH is also supported by the omnipresent situation that different types of functional head morphemes (e.g. mood, modality, tense, aspect and voice) occur in a fixed universal order (Chomsky 1957; Comrie 1976; Cinque 1994). Cinque argues that the order of adverbs and functional heads corresponds to each other; hence, it is an essential part of the UG. Cinque assumes that the UAH is barely affected by whether or not functional morphemes are morphologically realized or how they are materialized (i.e. being a suffix, an auxiliary or a particle). Furthermore, Cinque argues that morphological agreement and sentential negation have no impact whatsoever on the universally-fixed order of adverbs (i.e., the UAH). This implies that agreement and negation are not diagnostics of the adverb hierarchy. The UAH is schematized in (1).

\[
\text{(1)}
\]

This study aims to examine these assumptions against data from JA, an Arabic dialect that belongs to Semitic languages where the structural positions of adverbs are still under-investigated, while most available arguments are almost stipulative.

This study is structured as follows. Section 2 provides a general background about JA, with particular focus on the word order, subject-verb agreement patterns, and its pro-drop property. Section 3 examines the distribution of JA adverbs and adverbials that are located under Tense Phrase (low adverbs in our terminology). Section 4 discusses high adverbs/adverbials (located above TP). Section 5 is the conclusion.

2. Jordanian Arabic: An overview

Jordanian Arabic (JA) is a variety of Arabic which belongs to the Semitic language family, (see Jarrah 2017a,b). JA is spoken by roughly 9 million people in the Hashemite Kingdom of Jordan. It has a rich morphological system which comprises affixes such as inflectional markers for gender, person and number and clitics which include conjunction, prepositions and determiners (see El-Yassin 1985; Omari 2011; Al-Momani 2011; Jarrah 2017b, c). The unmarked word order in JA is SVO. However, like other Arabic varieties, JA permits, yet under certain situations, almost all possible word order permutations including VSO, SOV, VOS and OSV. Each permutation has its own independent structural properties.

In JA, overt pronouns get their morphological case due to their position in the sentence. For instance, NOM(inative)-case is assigned to free-standing pronouns that mostly occur sentence initially, (see (2a)); whereas,
ACC(usative)- and GEN(itive)-cases are assigned to bound pronouns that occur as clitics attached to the verb, (see (2b-c)).

(2)
(a) hu: ↑ifirtara ↑al-beit
he.NOM bought-3SG.M DEF-house
“He bought the house.”
(b) ↑aḥmad ↓ʃaaf-3SG.M-her.ACC fi-ʔas-sajjaara
Ahmad saw.3SG.M-M-def in-DEF-car
“Aḥmad saw her in the car.”
(c) ↑al-binat ↓ʃaaf-at-u fi-ha
DEF-girl saw-3SG.F-him.ACC in-it.GEN
“The girl saw him in it.”

JA is considered a null-subject language. The morpho-syntactic features of the subject (i.e. Person, Number and Gender) are realized by certain inflections attached to the main verb. For instance, in (2a) above the emphatic subject pronoun hu: ‘he’ can be safely dropped without distorting the grammaticality of the sentence. Moreover, in JA, the verb expresses full agreement with its subject, irrespective of the word order used, as shown in the following examples (taken from Jarrah 2017a, p. 7).

(3)
(a) wisˤl-u l-wlaad
arrived-3PL.M DEF-boys
“The boys arrived.”
(b) l-wlaad wisˤl-u
DEF-boys arrived-3PL.M
“The boys arrived.”

By contrast, Modern Standard Arabic (MSA) shows differences between SVO/VSO with respect to the subject-verb agreement. In VSO clauses, the verb agrees with its subject only in Person and Gender, while in SVO clauses the verb agrees with its subject in all of the grammatical features (i.e. Person, Number, and Gender (Fassi Fehri 1993, 2012; Benmamoun 2000; Jarrah 2019a,b). Consider the examples in (3a-b) from MSA (the examples are taken from Musabhißen 2009, p. 23).

(4)
(a) wasˤal-a ↑al-ʔawlaad-u
arrived.3SG.M-IND DEF-boys-NOM
“The boys arrived.”
(b) ↑al-ʔawlaad-u wasˤal-u:
DEF-boys-NOM arrived-3PL.M
“The boys arrived.”

In the following section, we discuss the distribution of low adverbs (i.e., adverbs that are base-generated in a position lower than Tense Phrase (TP)) in Jordanian Arabic (JA). It should be noted that all JA examples in this study are based on the first researcher’s idiolect. This researcher comes from Amman. Some other JA speakers coming from other parts of Jordan might find some grammatical examples marginal. It should be noted nonetheless that all (un)grammatical examples in this paper are judged by other 30 JA speakers who similarly come from Amman.
3. The distribution of low adverbs in JA

This section examines the distribution of low adverbs/adverbials in JA. It first explores the position of low adverbs with reference to negation in JA, showing that all low adverbs/adverbials c-command negation, contrary to what Cinque (1999) argues for Italian and French in that negation c-commands low adverbs in these two languages. This disparity between JA on the one hand and Italian and French on the other is attributed to the base position of negation in the said languages. Unlike the case in French and Italian, (low)\(^3\) negation in JA is generated above VP, but under TP as well as all related functional phrases, following the general lines of Benmamoun (2000). Afterwards, the relative order of low adverbs in relation to each other is discussed. The discussion reveals that JA low adverbs are ordered in a similar fashion that is predicted in Cinque’s (1999) UAH. This strongly speaks for the applicability of this hierarchy to JA grammar (and hence to natural languages as a whole), as it furnishes typological evidence in favour of this hierarchy. One important note to emphasis here is that this paper follows Kayne’ (1994) antisymmetric approach to linearization and c-command. An element that precedes another element, it (the former) should c-command it (the latter). This means that rightward is downward.

3.1. Low adverbs ad negation

It is found that most low adverbs in JA precede negation. This apparently is inconsistent with Cinque’s analysis for negation in Italian and French where negation is base-generated in a high position, relative to low adverbs. However, this contradiction dissolves if Benmamoun’s (2000) approach for negation in Arabic is adopted. Benamamoun provides evidence that negation is generated in a very low projection that is c-commanded by all material between TP and VP. This is shown to be true for JA. For example, habitual adverbs such as ʕaadatan ‘usually’ should occur to the left of the negative particle maa ‘not; if ʕaadatan follows maa, the resulting sentence would become ungrammatical, Consider the following pair, (ʕaadatan > maa).\(^4\)

\[
\begin{align*}
\text{(5)} \\
a. \text{ʔaħmadd ʕaadatan maa bɪsaafər fi-haːd ʔil-wagit} \\
\text{Ahmad usually not travel.3SG.M in-this DEF-time} \\
\text{“Ahmad usually does not travel this time.”} \\
b. *\text{ʔaħmadd maa ʕaadatan bɪsaafər fi-haːd ʔil-wagit} \\
\text{Ahmad not usually travel.3SG.M in-this DEF-time}
\end{align*}
\]

Additionally, the negative particle maa ‘not’ occurs with the tense anterior adverb lessa ‘yet’ which expresses negative information, providing that the latter precedes the former, as shown in the following examples.

\[
\begin{align*}
\text{(6)} \\
a. \text{ʔaħmadd lessa maa ʔadʒa} \\
\text{Ahmad yet not come.3SG.M} \\
\text{“Ahmad has not come yet.”} \\
b. *\text{ʔaħmadd maa lessa ʔadʒa} \\
\text{Ahmad not just come.3SG.M}
\end{align*}
\]

Another JA adverb which has the properties of lessa ‘yet’ is ʕumr ‘ever.’ This adverb necessarily precedes the negative particle maa ‘not’ and optionally follows lessa. Consider (7a) versus the ungrammatical example in (7b).

\[
\begin{align*}
\text{(7)} \\
a. \text{ʔaħmadd lessa maa ʔadʒa} \\
\text{Ahmad yet not come.3SG.M} \\
\text{“Ahmad has not come yet.”} \\
b. *\text{ʔaħmadd maa lessa ʔadʒa} \\
\text{Ahmad not just come.3SG.M}
\end{align*}
\]

\(^3\) Alqassas (2015) argues that there are two positions for negation in JA: low and high, depending on whether the relevant negation is bipartite or not (i.e. single). In this study, we show that low negation is preceded by all adverbs/adverbials, whereas high negation is preceded by high adverbs.

\(^4\) We do not provide English translation of ungrammatical examples.
On the basis of the data presented above, it appears that habitual adverbs like ʕaadatan and the tense anterior adverbs lessa and ʕʊmru should precede the negative particle maa. The examples above (5-7) are not consistent with Cinque’s proposal for Italian and French where negation necessarily precedes tense anterior adverbs. For instance, in Italian, the adverb mica ‘not’ precedes gia ‘already’ (see the examples in (8)), which in turn, precedes piu ‘any longer’ (see the examples in (9)).

(8)
a. Non hanno micagia chiamato, che io sappia.  
   “They have not already telephoned, that I know.”
b. *Non hanno giamica chiamato, che io sappia. 
   “They have already not telephoned, that I know.”

(9)
a. A{l’epoca non possedeva giapiu nulla. 
   “At the time (s)he did not possess already any longer anything.”
b. *A{l’epoca non possedeva piugia nulla. 
   “At the time (s)he did not possess any longer already anything.”

Although JA relative examples speak against Cinque’s proposal of the position of negation, relative to low adverbs/adverbials, they provide credence to his proposal that natural languages differ from each other with respect to the structural position of the negation which is proposed by Cinque not to be a diagnostic of the UAH. This is the reason why Cinque excludes negation from his hierarchy as it is subject to language-internal rules. JA provides evidence to this effect. This supports the view that negation might be part of the UG; however, its structural position may not (Kayne 1994 and Cinque 1994).

3.2. Order of low adverbs with respect to each other

The next task to conduct concerns the order of various low adverbs with reference to each other. After examining the relevant data, it turns out that habitual adverbs in JA precede frequentative adverbs which, in turn, precede volitional adverbs and celerative adverbs. In addition, JA perfective adverbs necessarily precede durative adverbs which precede completive adverbs.

To begin, the habitual adverb ʕala tˤuul ‘regularly’ commonly precedes the frequentative adverbial yaaliban ‘often,’ as is clearly shown in the following pair, (ʕaadatan >yaaliban). (Note that should be an intonational pause between ʕala tˤuul and yaaliban for the sentence to be accepted).5

5the adverbial ʕala tˤuul has two meanings: habitual with meaning regularly and manner with meaning directly.
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The adverb \textit{yaalibun} ‘often’ necessarily precedes the volitional adverb \textit{sammdan} ‘intentionally;’ otherwise, the resulting sentence would crash, as evidenced by the following examples, (\textit{yaalibun}>\textit{sammdan}).

11. a. \begin{tabular}{l}
\textit{ʔahmad} & \textit{yaalibun} & \textit{ʔal-walad} & \textit{sammdan} \\
\textit{Ahmad} & \textit{often} & DEF-boy & intentionally \\
\end{tabular}

“Ahmad often hits the boy intentionally.”

b. \begin{tabular}{l}
\textit{ʔahmad} & \textit{sammdan} & \textit{ʔal-walad} & \textit{yaalibun} \\
\textit{Ahmad} & intentionally & DEF-boy & often \\
\end{tabular}

Sentences in (11) clearly show that the adverb \textit{yaalibun} appears to the left of \textit{sammdan}, whether it occupies a sentence-final position (separated from \textit{sammdan} by other sentential elements) or is directly adjacent to \textit{sammdan}. The situation that when the latter appears to the left of the former, the sentence would crash demonstrates that frequentative adverbs precede volitional adverbs in JA. This sequential order between the two adverbs advocates Cinque’s hierarchy.

Likewise, the adverb \textit{sammdan} necessarily precedes the high celerative adverbial \textit{ʔibsurʔa} ‘quickly/fast,’ (see (12a)). If the order of these adverbs is switched, the resulting sentence would be ungrammatical, (see (12b)), (\textit{sammdan} > \textit{ʔibsurʔa}).

12. a. \begin{tabular}{l}
\textit{ʔahmad} & \textit{sammdan} & \textit{ʔibsurʔa} \\
\textit{Ahmad} & intentionally & quickly \\
\textit{ʔal-walad} & (\textit{ʔibsurʔa}) & DEF-boy & (quickly/fast) \\
\end{tabular}

“Ahmad intentionally quickly hit the boy.”

b. \begin{tabular}{l}
\textit{ʔahmad} & \textit{ʔibsurʔa sammdan} & \textit{ʔal-walad} & \\
\textit{Ahmad} & quickly & intentionally & hit.3SG.M & DEF-boy \\
\end{tabular}

Cinque differentiates between the celerative adverbs ‘quickly/rapidly’ and ‘fast’ in English. He shows that the former should precede the latter. As a result, it is located in a higher position in the hierarchy. Consider the following examples.

13. a. He \textit{quickly} ran away.
   He ran away \textit{quickly}.

b. *He \textit{fast} ran away.
   He ran away \textit{fast}.

\textit{ʔibsurʔa} is used for the two meanings in JA (this is why this adverbial leads sometimes to sentence ambiguity). However, if \textit{ʔibsurʔa} ‘quickly/rapidly’ occurs to the left of the verb, it manifests the interpretation of a subject-oriented adverb (i.e. the way Ahmad hits the boy was quick); whereas, if \textit{ʔibsurʔa} ‘fast’ appears to the right of the verb, it gives
the interpretation of a manner adverb, (i.e., Ahmad hits the boy in a quick manner). This clearly abides by the UAH. Evidence for this comes from sentences where $\text{ʔibsurʕa}$ is used in conjunction with the perfective adverb $\text{daajman}$ ‘always.’ The two adverbs can follow or precede each other, manifesting nonetheless different interpretations. In (14a) below, $\text{daajman}$ falls within the domain of $\text{ʔibsurʕa}$; therefore, it shows the interpretation that Ahmad is quick in eating apple, but not necessarily always. By contrast, in (14b), $\text{ʔibsurʕa}$ falls within the domain of $\text{daajman}$. In this case, the sentence has the interpretation that Ahmad always eats apple in a quick way.  

(14)  
a. $\text{ʔaħmadd ʔibsurʕa daajman bɔːkel tuffāah}$  
   Ahmad quickly always eat apple  
   “Ahmad quickly always eats apples.”  
b. $\text{ʔaħmadd daajman ʔibsurʕa bɔːkel tuffāah}$  
   Ahmad always quickly eat apple  
   “Ahmad always quickly eats apple.”  

On the other hand, when $\text{ʔibsurʕa}$ means ‘fast,’ (i.e. bears an interpretation of a manner adverb), it can only occupy a sentence-final position, as shown in the following example.  

(15)  
$\text{ʔaħmadd daajman bɔːkel tuffāah ʔibsurʕa}$  
Ahmad always eat apples fast  
“Ahmad always eats apples fast.”  

At this point, the discussion reveals the following relative order of JA low adverbs  

(16)  
$\text{ʕaadatan ‘usually’/ʕala tˤuul ‘regularly’ > yaliban ‘often’ > ʕammdan ‘intentionally’ > ʔibsurʕa ‘quickly’ > ʔibsurʕa ‘quickly/fast’}$  

Let us examine the relative order of the perfective adverb $\text{daajman}$ ‘always’ against the durative adverbial $\text{fawwran}$ ‘immediately.’ The perfective $\text{daajman}$ should precede $\text{fawwran}$; otherwise, the resulting sentence would become ungrammatical. This fact is shown in the following examples: ($\text{daajman > fawwran}$).  

(17)  
a. $\text{ʔaħmadd daajman fawwran bɪʃʃrab ʔahwe}$  
   Ahmad always immediately drink.3SG.M coffee  
   “Ahmad always immediately answers the phone.”  
b. $\text{*ʔaħmadd fawwran daajman bɪʃʃrab ʔahwe}$  
   Ahmad immediately always drink.3SG.M coffee  
   “Ahmad almost always drinks coffee.”  

Likewise, the prospective adverb $\text{taʔriːban}$ ‘almost’ in JA should precede the perfective adverb $\text{daajman}$ ‘always,’ as explained in the following pair, ($\text{taʔriːban > daajman}$).  

(18)  
a. $\text{ʔaħmadd taʔriːban daajman bffffffrab ʔahwe}$  
   Ahmad almost always drink.3SG.M coffee  
   “Ahmad almost always drinks coffee.”  
b. $\text{*ʔaħmadd daajman taʔriːban bffffffrab ʔahwe}$  
   Ahmad always almost drink.3SG.M coffee  
   “Ahmad almost always drinks coffee.”  

6Note the pair in (14) should be accompanied by appropriate intonational patterns to be accepted as noted by all of the informants.
The resulting hierarchy of JA low adverbs is structured in a way that clearly advocates for Cinque’s argument about adverbs being sequenced in a universal order.

(19) ʕaadatan /ʕala ʔuul> yaaaliban >ʕammdan >ʔibsorɣa >taʔri:ban> daajman > fawwran>

This discussion indicates that adverbs (and corresponding adverbials) in JA are constrained with respect to their distribution inside the sentence. Adverbs are not free but follow a strict order between them, taking into consideration Cinque's (1999) assumption that adverbs have one base-position; though, they may occur in different positions, given the movement of the elements around them.

In the following section, we examine the distribution of high adverbs with relation to negation (hence providing evidence for their relatively high position) and with each other (hence supplying evidence for their strict order between them).

4. Distribution of higher adverbs in JA

In this section, we provide evidence that high adverbs are generated above TP, providing support from JA in favour of Cinque's (1999) AUH. This section begins by discussing the position of high adverbs with reference to negation and tense in JA. It is found that negation (even if its projects above VP; see Alqassas 2015) is preceded by all high adverbs. Afterwards, the relative order of high adverbs is tackled, with respect to low adverbs. Finally, the relative order of high adverbs is explored with respect to each other.

4.1. High adverbs with respect to tense and negation

This section examines the distribution of two adverbials and one marker that are argued to be base-generated in the high portion of the clause, as representative examples of high adverbs/adverbials. These elements include the speech act adverb ʔibs'ara:ha ‘frankly’, ʔibhuun ʔhaad ‘fortunately’ and the evidentiality marker ʃikl ‘evidently’. The structural positions of these three elements is examined with respect to their positions to negation and tense.

Firstly, the speech-act adverbial ʔibs'ara:ha ‘frankly’ should precede the negative particle maa ‘not’ which generates above VP (cf. Alqassas 2015). Consider the following pair.

(20)  
| a. ʔibs'ara:ha | ʔahmadd | maa | sa:far |
| frankly | Ahmad | not | travelled.3SG.M |

“Frankly, Ahmad did not travel.”

b. *maa (ʔahmadd) ʔibs'ara:ha (ʔahmadd) sa:far
not Ahmad frankly Ahmad travelled.3SG.M

Now consider the relative order of ʔibs'ara:ha with respect to negation and the past tense copula kaan ‘was.’ The adverbial ʔibs'ara:ha occurs to the left of tense and negation, as shown in (21a); otherwise, the sentence would crashes, as shown in (21b).

(21)  
| a. bs'araaha | ʔahmadd | maa | kaan | mjftari | ʔas-sajjaara |
| frankly | Ahmad | not | was | bought | DEF-car |

“Frankly, Ahmad was not buying the car.”

b. *maa kaan bs'ara:ha ʔahmadd mjftari ʔas-sajjaara
not was frankly Ahmad bought DEF-car

Additionally, ʔibs'ara:ha remains in a sentence-initial position even if the subject appears post-verbally. In such
instances, the negative particle maa ‘not’ followed by kaan is argued to move to a position to the left of the subject.

(22)
ʔibsˤara:ha maa kaan ʔahmadd mifṭari ʔas-sajjaara
frankly not was.3SG.M Ahmad buying DEF-car

“Frankly, Ahmad was not buying the car.”

This indicates that ʔibsˤara:ha occupies a very high position in the sentence.7
Similarly, the evaluative adverbial lḥusn lḥaðˤ ‘fortunately’ should precedes the negative particle maa, as shown in (23a); otherwise the resulting sentence would crash, as evidenced in (23b).

(23)

a. lḥusn lḥaðˤ ʔahmadd maa saːfar ʕala masˤer  
fortunately Ahmad not travelled to Egypt

“Fortunately, Ahmad did not travel to Egypt.”

b. *maa lḥusn lḥaðˤ ʔahmadd saːfar ʕala masˤer  
not was fortunately Ahmad travelling to Egypt

The sentences in (23) provide evidence that lḥusn lḥaðˤ is base-generated in a high position. This is also supported by the following examples that show lḥusn lḥaðˤ should precede the sequence of maa and kaan.

(24)

a. lḥusn lḥaðˤ ʔahmadd maa kaan msaafar ʕala masˤer  
fortunately Ahmad not was travelling to Egypt

“Fortunately, Ahmad was not travelling to Egypt.”

b. *maa kaan lḥusn lḥaðˤ ʔahmadd msaafar ʕala masˤer  
not was fortunately Ahmad travelling to Egypt

This essentially implies that the two adverbials ʔibsˤara:ha and lḥusn lḥaðˤ c-command tense and negation. This strongly confirms Cinque’s AUH that high adverbs/adverbials are positioned in a very high in their clauses.

Consider now the relative order of negation and tense with reference to the evidentiality marker fikil ‘evidently’ which is argued to head the Mood_evidential Phrase that is originated above TP in JA clauses (Jarrah and Alshamari 2017).8 The marker fikil should precede the negative particle maa, as showing in the following pair.

(25)

a. fikil ʔaz-zalamah maa dʒawwaz  
evidently DEF-man not married

“Evidently, the man did not get married.”

b. *maa fikil ʔaz-zalamah dʒawwaz  
not evidently DEF-man married

As for tense, the evidentiality marker fikil ‘evidently’ fikil should precede the past tense copula kaan, as shown by the following sentence.

7The anonymous reviewer points out that the adverbial ʔibsˤara:ha ‘frankly’ can appear in different positions inside the sentence, including the position at the very end of the sentence. Cinque (1999) argues that such cases are resulted not because this adverbial is mobile (or has not a fixed position, but because of movement of the elements (located to its right) to some position in the CP. However this analysis does not exclude the possibility that some adverbials in JA obtain a freer distribution, we leave this matter open pending further research.

8According to Jarrah and Alshamari (2017), fikil is an evidentiality marker that is used when the speaker relies not on first-hand evidence as a source for the proposition of his/her utterance. They argue that it means evidently not surely.
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(26)
ʃɪkl ʔɪz-zalamah maa kaan midʒawwez
evidently the-man not was married

“Evidently, the man was not married.”

The discussion reveals that what is classified as a high adverb (originated above TP) in Cinque’s model of AUH is also positioned high in JA, as they precede negation and tense.

In the next subsection, the relative order of high adverbs in JA with reference to low adverbs is explored. We will argue that high adverbs necessarily precede low adverbs. This clearly adds typological credence to Cinque’s universal hierarchy, as JA, a Semitic language that belongs to a different language family of those investigated by Cinque, affirms this hierarchy.

4.2 The relative order of high adverbs with respect to low adverbs

In this subsection, we show that JA high adverbs maintain a rigid order with respect to low adverbs. JA high and low adverbs can be compared together; each high adverb can be paralleled sequentially with another low adverb. If the two high and low adverbs exhibit a rigid order, then by transitivity, the next paralleled adverbs are examined, and so on.

At first, the speech act adverb ʔibsˤarɑ:ħa ‘frankly’ necessarily precedes the habitual adverb ʕaadatan ‘usually,’ as can be shown in (27a). If the order is reversed the sentence crashes, (see 27b), (ʔibsˤarɑ:ħa>ʕaadatan).

(27)
a. ʔibsˤarɑ:ħa ʕaadatan ?ana baʔlari hali:b
frankly usually I buy.1SG milk

“Frankly, usually I buy milk.”
b. *ʕaadatan bsˤara:ħa ?ana baʔlari hali:b
usually frankly I buy.1SG milk

Consider now the relative order of the evaluative adverbial lɪħusn lħaðˤ ‘fortunately’ with the frequentative adverb yaalban ‘often.’ The former should precedes the latter, (lɪħusn lħaðˤ>yaalban).

(28)
a. lɪħusn lħaðˤ yaalban ʔaḥmadd
fortunately usually Ahmad
bstaxxdem ʔaḥzaam ʔal-ʔamaan
use.3SG.M belt DEF-safety

“Fortunately, usually Ahmad uses the seatbelt.”
b. *yaalban lɪħusn lħaðˤ ʔaḥmadd
usually fortunately Ahmad
bstaxxdem ʔaḥzaam ʔal-ʔamaan
use.3SG.M belt DEF-safety

Another example that shows that high adverbs precede low adverbs comes from the distribution of the evidentiality marker ʃikl ‘evidently’ with respect to the volitional adverb ʕammdan ‘intentionally,’ (ʃikl >ʕammdan).

(29)
a. ʃikl-uh ʕammdan ʔal-walad buʔtah ʔal-ʔbaab
evidently-3SG.M intentionally DEF-boy open.3SG.M DEF-door

“Evidently, intentionally the boy opens the door.”
b. *ʕammdan ʃikil-uh ʔal-walad biftah ʔal-baab
   intentionally evidently-3SG.M DEF-boy open.3SG.M DEF-door

Likewise, the epistemic adverb *jemkin ‘probably’ should precede the celerative adverbial ʔibsʊrʕa ‘quickly.’ (*jemkin > ʔibsʊrʕa).

(30)

a. *jemkin ʔibsʊrʕa ʔaħmadd raħ jiːdʒɪ
   probably quickly Ahmad will come.3SG.M
   “Probably, quickly Ahmad will come.”

b. *ʔibsʊrʕa jemkin ʔaħmadd raħ jiːdʒɪ
   quickly probably Ahmad will come.3SG.M

By the same token, the past-tense high adverb *zamaan ‘once’ should precede the low perfective adverb *daajman ‘always;’ otherwise, the resulting sentence would crash. (*zamaan > *daajman).

(31)

a. zamaan daajman ʔaħmadd kaan jsaafer ʕala masˤer
   once always Ahmad was.3SG.M travelling to Egypt
   “Once, always Ahmad was used to travel to Egypt.”

b. *daajman zamaan ʔaħmadd kaan jsaafer ʕala masˤer
   always once Ahmad was.3SG.M travel to Egypt

Other two JA adverbs which comply with Cinque’s approach include the high future-tense adverbial baʕdeɪn ‘then’ and the low durative adverbial fawwran ‘immediately.’ The adverbial baʕdeɪn should precede fawwran, as shown in (32a). The opposite word order between these two adverbs is not accepted, as it leads to the sentence being ungrammatical, as shown in (32b), (baʕdeɪn > fawwran).

(32)

a. baʕdeɪn fawwran ʔaħmadd ʔeʃʃtara sajjaara
   then immediately Ahmad bought.3SGM car
   “Then, immediately Ahmad bought a car.”

b. *fawwran baʕdeɪn ʔaħmadd ʔeʃʃtara sajjaara
   immediately then Ahmad bought.3SGM car

Similarly, the high irrealis adverb *ʔɪħtɪmaal ‘perhaps’ should precede the generic/prospective adverbial *bɔaaat ‘characteristically;’ (*ʔɪħtɪmaal > bɔaaat).

(33)

a. *ʔɪħtɪmaal bɔaaat ʔaħmadd jsaafer ʕala masˤer
   perhaps characteristically Ahmad travel.3SG.M to Egypt
   “Perhaps, characteristically Ahmad travels to Egypt.”

b. *bɔaaat *ʔɪħtɪmaal ʔaħmadd jsaafer ʕala masˤer
   perhaps characteristically Ahmad travel.3SG.M to Egypt
The fact that irrealis adverbs precede the generic/prospective adverbial complies with the UAH. Finally, the high possibility adverbial ʕalaʔalʔaɣlab ‘possibly’ should precede the low voice adverb mniːħ ‘well,’ (see 34a). The opposite word order between these two adverbs is not accepted, as it leads to the sentence being ungrammatical, (see 34b). (ʕalaʔalʔaɣlab > mniːħ).

4.3 relative order of high adverbs with respect to each other

In this section, the word order of high adverbs is explored with reference to each other. Based on the comparison of JA high adverbs; it is found that high adverbs/adverbials have a rigid order between themselves which strictly complies with the UAH.

The speech act adverb ʔibsˤarɑ:ħa ‘frankly’ should precede the evaluative adverb lɪħusn lħaðˤ ‘fortunately.’ This fact is evidenced by the following pair, (ʔibsˤarɑ:ħa > lɪħusn lħaðˤ).

Let us, at this point, examine the relative order of lɪħusn lħaðˤ ‘fortunately’ with the evidentiality marker fikil ‘evidently.’ According to Cinque’s UAH, the former should precede the latter; otherwise, the resulting sentence would be ungrammatical, which is the case (lɪħusn lħaðˤ > fikil).

By transitivity, it can be proposed ʔibsªara:ha ‘frankly’ is higher in the tree than the two adverbs fikil ‘evidently’ and lɪħusn lħaðˤ ‘fortunately.’

The evidentiality marker fikil ‘evidently’ precedes the epistemic adverb jemkin ‘probably’ which appears right under MoodEvidential Phrase in Cinque’s AUH. Consider the following pair, (fikil > jemkin).
Let us now compare the order of *jemkin* ‘probably’ with the past-tense high adverb *zamaan* ‘once.’ The adverb *jemkin* mainly precedes *zamaan*; otherwise, the resulting sentence would be ungrammatical, which is the case (*jemkin>*zamaan).

(38)

a. *jemkin* zamaan ʔɪz-zalamah saːfar ʕala ẓala masˤer
   probably once DEF-man travelled.3SG.M to Egypt
   “Probably, once the man travelled to Egypt.”

b. *zamaan jemkin* ʔɪz-zalamah saːfar ʕala ẓala masˤer
   once probably DEF-man travelled.3SG.M to Egypt

Consider now the relative order of the past tense *zamaan* ‘once’ and the future-tense adverbial *baʕdeɪn* ‘then.’ The adverb *zamaan* should precede *baʕdeɪn*, as shown in the following examples, (*zamaan>*baʕdeɪn). (Note that there is a short pause between *zamaan* and *baʕdeɪn*).

(39)

a. zamaan, *baʕdeɪn* ʔaḥmadd
   once then Ahmad
   ʔiṭxaːrədʒ mɪn ʔiλ-dʒaamʕa
   graduated.3SG.M from DEF-university
   “Once, then Ahmad graduated from the university.”

b. *baʕdeɪn* zamaan ʔaḥmaddʔiṭxaːrədʒ mɪn ʔiλ-dʒaamʕa
   then once Ahmad graduated.3SG.M from DEF-university

Additionally, the future-tense adverbial *baʕdeɪn* ‘then’ should precede the irrealis adverb *ʔɪħtɪmaal* ‘perhaps’, something that attests Cinque's model. Consider the following examples, (*baʕdeɪn>*ʔɪħtɪmaal).

(40)

a. *baʕdeɪn* ʔiħtɪmaal (ʔaḥmadd) saːfar ʔala masˤer
   then perhaps Ahmad travelled.3SG.M to Egypt
   “Perhaps, then Ahmad travelled to Egypt.”

b. *ʔiħtɪmaal baʕdeɪn* (ʔaḥmadd) saːfaːr ʔala masˤer
   perhaps then Ahmad travelled.3SG.F to Egypt

Furthermore, the irrealis adverb *ʔiħtɪmaal* ‘perhaps’ should precede necessity adverb *laaζem* ‘necessarily’ (*ʔiħtɪmaal>*laaζem).
(41)
a. ʔɪħtɪmaal  laazem ʔaħmadd jsaafer bukra
perhaps necessarily Ahmad travel.3SG.M tomorrow
“Perhaps, necessarily Ahmad travels tomorrow.”
b. *laazem ʔɪħtɪmaal ʔaħmadd jsaafer bukra
necessarily perhaps Ahmad travel.3SG.M tomorrow

Finally, compare the necessity adverb laazem ‘necessarily’ with the modal possibility adverb ʕala ʔalʔaɣlab ‘possibly’ which are the last low adverbs/adverbials among the high adverbs of AUH. In JA, it appears that the necessity adverb laazem ‘necessarily’ precedes ʕala ʔalʔaɣlab otherwise, the resulting sentence would be ungrammatical, as clearly shown in the following instances, (laazem>ʕala lʔalʔaɣlab).

(42)
a. laazem ʕala ʔalʔaɣlab Salma tsaafer bukra
necessarily possibly Salma travel.3SG.F tomorrow
“Necessarily, possibly Salma will travel tomorrow.”
b. * ʕala ʔalʔaɣlab laazem salma tsaafer bukra
possibly necessarily Salma travel.3SG.F tomorrow

The order of JA high adverbs/adverbials is presented in the following hierarchy:

(43)
ʔibsˤara:ha > lhusn lḥaḍʾ > jikl> jemkin > zamaan > bašdeem> ʔḥtmaal> laazem >ʕala ʔalʔaɣlab.

The hierarchy in (43) demonstrates clearly that Cinque's proposal is amenable to JA facts as it predicts successfully the actual order between high adverbs in JA.

Based on the facts discussed above, a hierarchy that comprises JA high and low adverbs is schematized in (44).

(44)

The hierarchy in (44) confirms that adverbs (or corresponding adverbials) in JA are sequenced in a relative fixed order as they do not occur in the sentence randomly. This observation is clearly consistent with Cinque’s AUH. This fixed order between high adverbs and low adverbs indicate that JA is a configurational language as the high functional area of a clause does not intersect with the low functional area.

5. Conclusion
This study has examined the hierarchy of adverbs and adverbials in JA, using Cinque’s (1999) UAH, as the theoretical framework. It has provided evidence that, in JA, there are low and high adverbs which follow the UAH, as proposed by Cinque. This study has shown that low adverbs c-command the negative particle maa. Although this fact runs counter to corresponding facts in Italian and French, it shows that negation does not have a rigid position in natural languages, but it is subject to language-internal rules. Additionally, this study has explored the relative order of JA low adverbs with respect to each other. The discussion has revealed that low adverbs comply rigidly with the universal order as proposed by Cinque. The same assumption has been drawn to high adverbs in JA whose order is also consistent with Cinque’s proposal.

The findings of this study have supported Cinque’s (1999) UAH which is shown to be data-motivated. JA provides
typological support to this hierarchy whose UG-status is thus strengthened. Moreover, this study has provided evidence that the form of the elements that fill Spec positions of the functional phrases of Cinque’s model does not affect the hierarchy itself. JA adverbials are ordered in the same way corresponding with adverbs in other languages are. This indicates that adverbials can be used to replace adverbs and their functions in natural languages (see Larson 1985, along these lines).

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