JJMLL

The Syntax of the Epistemic Modal *kaan* in Jordanian Arabic

Hamed Al Jaradat*, Mohammad Almalahmeh
Department of English Language and Literature, Mu'tah University, Jordan

Abstract

The goal of this study is to investigate the syntax of the epistemic modal item kaan in Jordanian Arabic (JA). It was pointed out that kaan is a deductive epistemic modal marker that expresses probability based on sensory fact/s. We have argued that this kaan is an epistemic modal adverb heading Epistemic Modal Phrase (MepP) in the left periphery, above TP. That kaan precedes existential fii, sentential negation, and a topicalized item as well as a focused item empirically supports the hypothesis that kaan resides in the left-periphery. In order to explain lack of agreement affixes on kaan along the lines of the minimalist approach (Chomsky 2000, 2001), we have assumed that kaan does not carry semantically uninterpretable features and lexically unvalued features that need to be checked. Finally, it was found that epistemic kaan may not occur in non-declarative sentences. This exclusion was explained in light of the truth conditions that non-declarative clauses lack.

Keywords: Modal, Epistemic Modal, Left-Periphery, Syntax, Jordanian Arabic.

1. Introduction

Epistemic modality refers to the means used to express the speaker's status about the certainty of the proposition, i.e. to what extent the speaker is sure that the proposition holds true in reality (Palmer 2001; de Haan 2006; Nuyts 2006). For example, having a look at the sentences (1-2) below is sufficient to conclude that the speaker is more certain about the availability of David at home than about the availability of John. Intuitively, certainty goes in a scale from the highest degree of certainty through probability to possibility that the proposition is factually real (Nuyts 2006).

(1) John may be at home.

(2) David must be at home.

Palmer (2001) calls attention to three types of epistemic modality based on the judgment expressed by the modality expression: speculative, deductive, and assumptive. When the speaker is uncertain about the judgment, speculative epistemic modality (3) arises. Deductive epistemic modality, as in (4), is witnessed in case the judgment is based on facts known to the speaker. If the judgment relies on general knowledge and experience, assumptive epistemic modality (5) is in play.

(3) Sarah may win the competition.

(4) Sarah must win the competition.

* Corresponding Author: **hamed9452@yahoo.com**

(5) Sarah will win the competition.

In Jordanian Arabic[1] (JA, henceforth), the particle *kaan* 'could' is used as an epistemic modal marker (6), in addition to its wide use as a past tense marker (7). These two sentences exhibit one of the basic morpho-syntactic differences between epistemic *kaan* and temporal *kaan*: unlike the latter one, epistemic *kaan* always appears in the uninflected form, without being incorporated into agreement affixes, a fact which will be explained later in the current study.

(6) CONTEXT: Two classmates are wondering how Ali could have finished translating the book in a very short period of time.

Speaker A: keif   gidir   ʕali   jinhi   it-tardʒamih   bi-ha-ssurʕah?

             how   could.3SGM   Ali   finish.3SGM   the-translation   in-this-speed

             'How could Ali finish the translation assignment so fast?'

Speaker B: kaan   riim   saaʕadat-uh[2].

             could   Reem   helped-him

             'Reem could have helped him.'

(7) kaan-at   riim   mariið̣-ah   l-ʔusbuuʕ   l-maað̣ii.

   was-3SGF   Reem   sick-3SGF   the-week   the-last

   'Reem was sick last week.'

Interestingly, in many contexts *kaan* may be taken as both an epistemic modal and a past tense marker, as witnessed in (8). One of the ways that may help to disambiguate such a sentence is through phonetic cues. It should be borne in mind that intonation matters here; epistemic *kaan* is accented, whereas *kaan* in its use to indicate past tense is not accented. Starting from here, when the epistemic reading is meant, *kaan* will be typed in the given data in uppercase (i.e. KAAN) to help to convey the intended use.

(8) kaan   ʔabu-uh   mariið̣.

   could   father-3SGM.POSS   sick.3SGM

   'His father could be sick.'   *kaan* = Epistemic Modal

   'His father was sick.'   *kaan* = Past Tense Marker

The goal of this paper is to address the syntax of *kaan* in JA in its epistemic modal use. Basically, we intend to provide a descriptive account of the grammar of the epistemic modal *kaan* with a corpus of data from JA, and we will explore the syntax of *kaan*, focusing on its position in the clause structure. In this endeavor, implications about other syntactic phenomena are sought.

This paper is structured as follows. Section 2 examines the semantic/pragmatic properties of *kaan* in its epistemic modal use in JA. Previous syntactic accounts of epistemic modals in Arabic and in other languages are reviewed in section 3. Section 4 is devoted to the syntax of epistemic *kaan*. Here, the proposed analysis assumes that this *kaan* is a modal auxiliary verb filling the head position of Epistemic Modal Phrase in the left-periphery. Arguments for the analysis are detailed. Finally, concluding remarks are drawn in section 5.

2. On the Semantics/Pragmatics of Epistemic *kaan*

In its use as an epistemic modal in JA, *kaan* indicates that the speaker, when uttering a statement modified with *kaan*, has come with a probable conclusion derived from certain sense-based evidence. Accordingly, with reference to Palmer's (2001) classification of epistemic modality into speculative, deductive, and assumptive categories, *kaan* appears to be a deductive epistemic modal item. Its function is to indicate that there is a reasonable inference drawn from a certain fact or a set of facts (Palmer 2001; Song 2009). To illustrate, if your car stops working over the highway, one of the people may voluntarily stop to offer help, and a hypothesis they may raise is that the gas may have run from the car. Accordingly, a sentence modalized with *kaan*, like (9), is a felicitous response from them.

(9) KAAN   χilisˤ   l-banziin   mini   s-sajjaarah.

   could   ran.out   the-gas   from   the-car

   'The gas could have run out of the car.'

On the other hand, if you check the car closely and you make sure that there is no gas in the car, the same epistemically modalized sentence (9) would not be appropriate. Instead, the unmodalized version of the same sentence (10) that asserts, without signaling any likelihood, that there is no gas in the car will be the felicitous utterance in that context. In other words, since the speaker has the certain knowledge, there is no need for reasoning with epistemic *kaan*; rather, assertion with the unmodalized statement is the well-chosen utterance (Karttunen 1972; Giannakidou 1999; Song 2009).

(10) χilisˤ   l-banziin   mini   s-sajjaarah.

   ran.out   the-gas   from   the-car

   'The gas ran out of the car.'

Before proceeding, a caveat about the translation of epistemic *kaan* into English is in order. The basic deductive epistemic modal expression in English is *must*, but *kaan* is rendered here as *could* since the latter is known to suggest a less probable inference. Hence, tentativeness of judgment is highlighted with *could*, which, as a result, better matches *kaan* that is under examination (Palmer 2001).

The possible inference suggested with deductive *kaan* in JA may be about a state or an event in the present (11), in the past (12), or in the future (13).

(11) KAAN   bi-l-beit   naajm-ih   hassa.

   could   in-the-home   asleep-3SGF   now

   'She could be asleep at home now.'   (Present)

(12) KAAN   kaan-at   bi-l-beit   naajm-ih   lamma   insarag-at

   could   was-3SGF   in-the-home   asleep-3SGF   when   was.stolen-3SGF

   sajjaairt-haa.

   car-3SGF.POSS

   'She could have been asleep at home when her car was stolen.'   (Past)

(13) KAAN   bid-haa   tiidʒii   bukrah,   muʃ   l-jom

   could   would.like-3SGF come.3SGF   tomorrow   not   the-today

   'It could be that she would like to come tomorrow, not today.'   (Future)

It is noteworthy that epistemic *kaan* conversationally implicates, but does not assert, a probable inference. One argument for this stance is that the truthfulness of the proposition, which is implicated with *kaan*, can be asserted without resulting in any redundancy[3] , as exhibited in (14).

(14) CONTEXT: An employee wants to express that his prediction about the reason behind the absence of his fellow worker has come true.

ʔanaa	gult	KAAN	bint-ha	mariiðˤah	w-fiʕlan
I	said.1SG	could	daughter-3SGF.POSS	sick.3SGF	and-really

tˤilʕat	mariiðˤah.
was.proved.3SGF	sick.3SGF

'I said that her daughter could be sick, and it was proved that she was really sick.'

In addition, the inference that is established with *kaan* may be cancelled without any contradiction ensuing, as illustrated in (15).

(15) CONTEXT: One of fellows in a camping trip wants to say that his earlier conclusion about the unavailability of bread was not right.

fi-l-bidaajjih	gult	KAAN	maa-fii	χubz	bas	baʕdein
in-the-beginning	said.1SG	could	NEG-exists	bread	but	later

bajjan	fii.
was.found	there

'In the beginning I said that there was no bread available, but later it was found that there
    was.'

To sum up, in JA *kaan* takes a proposition in order to give a judgment that the proposition is probable in light of the given sensory fact/s. This probability is implicated, and not stated. This is why no redundancy results if any assertion of the implicated proposition is given, and why no contradiction follows in case the deduction is no longer in effect.

3. Previous Syntactic Analyses of Epistemic Modals

For de Haan (2006) and Nuyts (2006), epistemic modal meaning may be expressed with various means. The most common way to denote (un)certainty is the modal verb, like *may, could,* and *must* in (16). Adverbs, like *maybe* in (17), may also mark the epistemic modal value of the sentence. It may be pertinent to note that modal adverbs in English are mainly epistemic (Perkins 1983).

(16) They may/ could/ must be at home now

(17) Maybe the manager can solve this problem for you.

Epistemic modal meaning is also expressed through mood. By and large, the indicative mood is used to refer to real events; whereas, the subjunctive mood is used when unreal and hypothetical events are described (Palmer 2001; de Haan 2006). For example, in Spanish the difference between belief and doubt in (18) and (19), respectively, is marked using indicative (18) and subjunctive (19) moods.

(18) creo   que   aprende.

    I.believe   that   learn.3SG. PRS.IND

'I believe that he is learning.'

(Palmer 2001, 5)

(19) dudo   que   aprenda.

    I.doubt   that   learn.3SG. PRS.SBJV

'I doubt that he is learning.'

(Palmer 2001, 5)

In addition, epistemic modality may be coded by clitics. This may be illustrated with examples from Valley Zapotec, as shown in (20), where it has long been maintained that the second position clitic *–zhyi'* represents the most common means of expressing epistemic modality (Munro 2006).

(20) b-da'uh-zhyi'   Gye'eihlly   bxːàady.

    PRF-eat-EPIS   Mike   grasshopper

'Mike must have eaten the grasshopper.'

(Munro 2006, 189)

As for the syntactic status of epistemic modal verbs in English, it is long held that modal verbs, including epistemic ones, exhibit properties of auxiliary verbs. Like auxiliary verbs, modal verbs i) precede negation (e.g., He may not come on time.), ii) undergo inversion with the subject in interrogatives and other inversion contexts, without *do*–support (e.g., Scarcely could he see the flag.), and iii) occur stranded before a VP that has undergone ellipsis (e.g., He may win, but she may not.) (Alex-Tober and Gergel 2016). Based on these grounds, it has been proposed in the generative research that a modal verb in English is generated in the T position, so a sentence having a modal verb in English is structurally represented as in (21) (Chomsky 1981; Lasnik 1995).

(21)
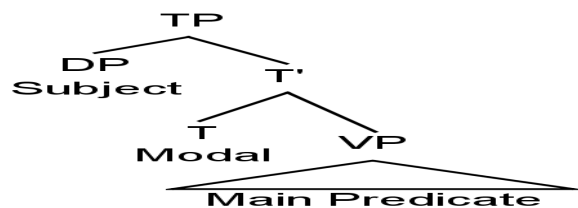
The class of modal verbs in English corresponds to modal particles in Arabic, but not modal verbs. As maintained in Fassi-Fehri (1993, 2012) and Albaty (2019), modal particles in Arabic select VPs as their complements (22), whereas modal verbs are followed with CPs (23).

(22) qad   tumtˤir-u.

    may   rain.3SGF-INDIC

'It may rain.'

(23) jumkinu   ?an   jatrik-a   ʕamal-a-hu.

    may   COMP   quit.3SGM-SUBJ   job-ACC-POSS

'It is possible that he would quit his job.'

A deep look on epistemic *kaan* that is undergoing inspection in the current research shows clearly that it is neither a modal particle nor a modal verb. It will be shown below with more illustrative examples and with more technical details that epistemic *kaan* has the whole TP in its scope, behaving in a way more like the epistemic modal adverbs *maybe* and *perhaps* in English, as in (24) below. In that position, a modal adverb expresses the speaker's judgment of probability about the whole proposition in the TP (Palmer 2001; Suzuki and Fujiwara 2017). Hoye (1997) classifies modal adverbs into content disjuncts expressing conviction, like *admittedly, certainly, definitely,* and *indeed*, among others, and content disjuncts expressing doubt, including *apparently, likely, maybe, perhaps,* and others. It is obvious that epistemic *kaan* patterns with the latter group of modal adverbs.

(24) Perhaps/Maybe the president will come and visit us tomorrow.

4. The Syntax of *kaan*

In this section, the beginning will be with the analysis we propose for epistemic *kaan* and the position of *kaan* in the clause structure will be explored. Then, issues like the affixes that may and may not attach to *kaan*, the scopal relationship between *kaan* and negation, and the legitimacy of *kaan* in nonassertive contexts are addressed.

4.1. kaan in the Clausal Hierarchy

As appears in the examples presented above, epistemic *kaan* occurs in a clause-initial position and joins sentences with present, past, and future tenses (examples 11-13 in section 2). It has been evident that the deductive epistemic modal *kaan* has the semantic function of implicating that the proposition contained in the sentence is judged probable in the light of the available sensory evidence. Based on this grounding, and supported with further arguments to be put forward below, we are led to propose that *kaan* that is undergoing investigation is an epistemic modal adverb heading Epistemic Modal Phrase (MepP) in the left periphery, above TP. Thus, a sentence like (25) has the structure represented in (26). It should be made clear that this representation of the sentence instantiating the Verb-Subject-Object order assumes that the verb first merges in the head position of VP and then moves to the T position, and that the subject remains in Spec, VP (Mohammad 2000; Aoun et al. 2010).

(25) KAAN   tʃatˤtˤal   tilifon-uh.

could   broke.3SGM   telephone-3SGM.POSS.

'His telephone could have been broken.'

(26)
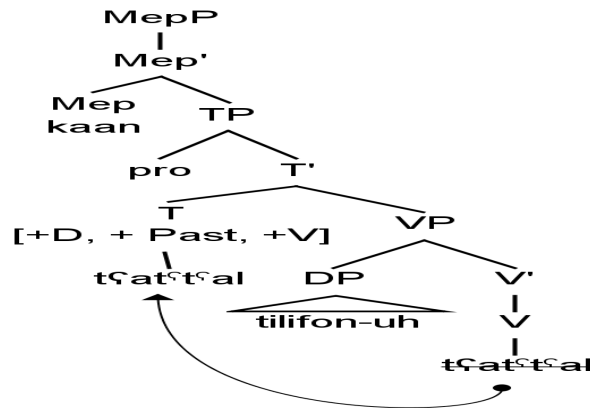
As displayed in the tree diagram, epistemic *kaan* first merges in the A' domain, which captures the observation that this modal is separate from the proposition held in the sentence, so its basic function is to express judgment about the probability of that proposition, as discussed in section 2 (Drubig 2001). In the same vein, assuming that epistemic *kaan* heads MepP above TP explains why *kaan* gives rise to epistemic reading to the already temporally marked sentences. In other words, modal and temporal renderings of epistemically modalized sentences via *kaan* are distinct, which accounts for the observation that *kaan* may be found in sentences marked with present, past, and future tenses, as exemplified above in (11-13).

Interestingly, *kaan* and *kaan* may happen to surface in sequence in JA, where the first is a modal marker and the second is a past tense marker, as evident in (27-28), corroborating the stand that epistemic *kaan* is distinct from the tense of the clause encompassing it.

(27) KAAN kaan   naajim.
   could was.3SGM asleep.3SGM
   'He could have been asleep.'

(28) KAAN kaan-at   bi-s-suug.
   could was-she in-the-market
   'She could have been in the market.'

An important argument in favor of the analysis already advanced is pertinent to existential *fii* in JA. It has long been assumed that this exact type of *fii* is treated in JA and other varieties of Arabic as an expletive subject in Spec, TP[4] (Mohammad; 2000; Aoun et al. 2010; Alsarayrah, 2012). As found in (29), *kaan* precedes *fii*; this word order can be easily accounted for if we assume that *kaan* resides in the left-periphery, higher than the existential subject that lies within TP.

(29) CONTEXT: A lady is discussing a problem in her car with her neighbor.

Speaker A: s-sajjaarah   tirtafiʕ   ħararit-ha   kθiir   ha-l-ʔajjaam.

          the-car   raises.3SGF   temperature-3SGF.POSS   too.high   these-the-days

          'The car engine is getting too hot these days.'

Speaker B: KAAN   fii   muʃkilih   bi-l-muħarrik.

         could   there   problem   in-the-motor

         'There could be a problem in the motor.'

It should be mentioned that *kaan* typically comes before the sentential negative marker *ma-* in JA (30). Under the assumption that *ma-* resides above TP, as maintained in Alsarayrah (2012), many constructions can receive a straightforward explanation, like affixing *ma-* to existential *fii* (30), which is taken, as already pointed-out, to be in Spec, TP, and to an adverbial with a pronominal clitic referring back to a lower DP (31). The point that epistemic *kaan* lies in the left-periphery, consequently, receives further support.

(30) KAAN   maa-fii mʌjj   bi-l-χazzan.

     could   NEG-there   water   in-the-tank

     'There could be no water in the tank.'

(31) KAAN   maa-ʕumr-u*^{i}*   ʕalii*^{i}*   ʃaaf   ħajjih.

     could   NEG-ever-3SGM Ali   saw.3SGM   snake

     'Ali could have never ever seen a snake.'

Before proceeding, the issue of scope between *kaan* and negation sounds worthy of examination. It is evident in (30-31) that the epistemic modal adverb *kaan* scopes over negation. That is, *kaan* does not occur in the scope of negation. To clarify, in (30) the possibility is held for water not to be left in the tank, and, likewise, in (31) the speaker indicates that it is possible for Ali not to have ever seen a snake. Put differently, when *kaan* accompanies negation in JA, the possibility is maintained for the subject not to hold for the predicate. Importantly, this observation patterns with Drubig's (2001) stance that epistemic modals, cross-linguistically, cannot be in the scope of negation.

Now it has been established that *kaan* scopes over negation in JA, and it appears in (30-31) that *kaan* precedes the sentential negative particle *maa-*. Two points should be mentioned in this regard. First, *kaan* may not follow the negative particle in terms of word order, as evident in (32) below.

(32) a. KAAN   maa-ligi   l-masˤaari.

      could   NEG-found.3SGM   the-money

    'Probably he did not find the money.'

    b.*maa-KAAN   ligi   l-masˤaari.

      NEG-could   found.3SGM   the-money

Second, another way to show that negation may not host *kaan* in its scope is to refer to the fact that *kaan* may not be found after adversative verbs, like the verb *ʔankar* 'denied' in (33). Adversative verbs are known to establish for a negative context, so they are considered to be of the licensers of negative polarity items, as exemplified in (34), where the negative polarity item *ħada* is legitimate thanks to the

adversative verb *ʔankar* (Drubig 2001; Aslarayrah 2012). Accordingly, bearing in mind that *kaan* may not be in the scope of negation, the explanation for the ungrammaticality of (33), with *kaan*, follows directly.

(33) ʔankar-at ʔinnuh (*KAAN) insarag-at sajjaart-uh
    denied-she that could was.stolen-3SGF car-3SGM.POSS
    'She denied that his car could have been stolen.'

(34) ʔankar-at ʔin-ha ʃaaf-at ħada fi-l-ɣurfah.
    denied-3SGF that-3SGF saw-3SGF anyone in-the-room
    'She denied seeing anyone in the room.'

In the same fashion, finding that the epistemic item *kaan* may be found immediately before a focused constituent, as witnessed in (35) constitutes empirical evidence to the hypothesis that *kaan* is situated in an A' position above TP. In this case, the judgment of probability that *kaan* achieves is specific to the focused item only, not to the whole proposition in the statement. For example, in (35), it is asserted that the person has left, but the speaker expresses the judgment that the means of transportation used by that person could be the bus, but not his car.

(35) KAAN bi-l-baasˤ tˤiliʕ, muʃ b-sajjar-tuh.
    could in-the-bus rode.3SGM, not in-car-3SGM.POSS
    'He could have ridden the bus, not his car.'

That epistemic *kaan* may express judgment about a focused item as well as about the whole proposition explains the puzzle that arises when *kaan* accompanies a pronominal clitic (36) and a strong pronoun (37). Generally speaking, a clitic, unlike a strong pronoun, may not appear in a focused position in Arabic (Fassi-Fehri 1993). This observation is consistent with the distribution of these pronominals in (36-37). In (36), the enclitic *-uh* first-merges in the subject position, and then attaches to the c-commanding head *kaan*[5]. The modal *kaan* here expresses the speculation about the entire proposition; it is probable, in light of certain evidence, that an accident was made by the man being talked about. In (37), on the other hand, the strong pronoun *huu* 'he' is assumed to be in Spec, FocP, as a clefting construction is instantiated in this sentence, where a focused item is followed with a headless relative clause (Ouhalla 1999). The judgment of probability that *kaan* here achieves is pertinent to the doer of the accident. The speaker asserts that an accident happened, but it is deduced to be *he* (indexing a man known to the interlocutors), not anyone else, who has made the accident.

(36) KAAN-nuh ʕimil ħaadiθ.
    could-3SGM made.3SGM accident
    'He could have made an accident.'

(37) KAAN huu illii ʕimil ħaadiθ.
    could he who made. 3SGM accident
    'It is he who could have made an accident.'

In order to have a comprehensive picture about the location of epistemic *kaan* in the left-periphery, it is essential to refer to the fact that a topicalized material (or it may be called clitic left dislocated item[6]) may precede *kaan* that is undergoing inspection (38). To achieve the epistemic reading of the utterance

containing *kaan* in (38), a prosodic break should follow the topicalized item *s-sajjaarah* 'the car' which receives rising prominence[7]. The judgment of probability, in this case, is for the whole proposition denoted in the embedded clause having *kaan*; speaker B has drawn an inference, based on certain evidence perceived by one or more of senses, that it is probable for the car to have been bought by the friend they are talking about in installments.

(38) CONTEXT: Two friends are discussing how their third friend has been able to buy a new mobile phone and a new luxurious car.

Speaker A: maaʃaaʔallah!   miʃtarii   ʔaifun   ħadiiθ   w-marsiidis

           prays.be.to.Allah   buying.3SGM   iPhone   new.3SGM   and-Mercedes

           ħadiiθ-ih.

           new-3SGF

           'Prays be to Allah! He has bought a new iPhone and a new Mercedes.'

Speaker B: laa   tistaɣrib.   it-tilifon   hadijjih   min   ʔamm-uh

           NEG   be.surprised.2SGM   the-telphone   gift   from   mother-3SGM.POSS

           wi-s-sajjaarah   KAAN   iʃtaraa-haa   ʔaqsˠaatˠ.

           and-the-car   could   bought.3SGM-3SGF.POSS   in.istallments

'Don't be surprised. The telephone is a gift from his mother and the car she could have bought in installments.

With reference to the model of the cartography of the left-periphery advanced by Rizzi (1997), sketched in (39), one can say that *kaan* may occupy any position between ForceP and FinP, where the latter corresponds to TP; and the judgment it makes applies to the whole proposition held in the statement, except if it precedes FocP.

(39)   ForceP   >   TopP   >   FocP   >   TopP   >   FinP

Before closing the discussion about epistemic *kaan* in the clausal hierarchy, we find it essential to resort to the universal hierarchy of functional heads developed by Cinque (1999:106), displayed in (40), in an attempt to probe the location of *kaan* in relation to other types of modals in JA. In line with the hierarchy, epistemic *kaan* precedes tense markers, as witnessed in many examples given above.

(40)

$$Mood_{speech\ act} > Mood_{evaluative} > Mood_{evidential} > Mod_{epistemic} > T\ (Past) > T\ (Future) > Mood_{irrealis} > Asp_{habitual}/T\ (Anterior) > Asp_{perfect} > Asp_{retrospective} > Asp_{durative} > Asp_{progressive} > Asp_{prospective}/Mod_{root} > Voice > Asp_{celerative} > Asp_{completive} > Asp_{(semel)\ repetitive} > Asp_{iterative}$$

Based on the hierarchy, it is expected for epistemic *kaan* to occur prior to a root modal in JA. Indeed, this prediction is borne-out, as appears in (41), where epistemic *kaan* precedes the root modal *laazim,* as well as in (42), where *kaan* precedes the root modal *gidir*. Needless to say, if *kaan* is taken after the root modal items in these two sentences, ungrammaticality ensues.

(41) CONTEXT: A staff member wonders why his manager is angry with him, and he is discussing the issue with his colleague.

Speaker A: muʃ ʕaarif leiʃ l-mudiir zaʕlaan minn-i.

           NEG knowing.3SGM why the-managr angry.3SGM from-1SG

           'I don't know why the manager is angry with me.'

Speaker B: KAAN kaan laazim itbbalɣ-uh gabl maa

           could was must tell.2SGM-3SGM before EMPH

           tiħkii maʕ iʃ-ʃurtˤah?

           call.2SG with the-police

           'Probably you must have told him before you called the police?'

(42) KAAN maa-gidir jiftaħ l-baab.

     could NEG-could.3SGM open.3SGM the-door

     'Probably he could not open the door.'

    To sum up, it is argued that the modal particle *kaan* in JA is an epistemic modal adverb residing in the left-periphery, above tense and the sentential negative particle *not*. It may precede a focused item, and, then, its judgment of deduced probability pertains to the focused item only. It may also follow a topicalized constituent. After reviewing the basic distributional properties of epistemic *kaan*, the morpho-syntax of epistemic *kaan* in JA sounds worthy of examination.

4.2. The Morpho-Syntax of kaan

    As can be easily noticed in all the examples given above, epistemic *kaan* in JA does not show agreement in grammatical features with any constituent in the clause it epistemically modifies. For example, one can observe in (43) below that *kaan* does not exhibit agreement with the preverbal subject *l-walawd, l-bint, l-wlaad,* or *l-banaat*.

(43) KAAN l-walawd/ l-bint/ l-wlaad/ l-banaat ʔinsˤaab/

    could the-boy/ the-girl/ the-boys/ the-girls was.infected.3SGM

    ʔinsˤaab-at/ ʔinsˤaab-u/ ʔinsˤaab-an b-korona

    was.infected-3SGF was.infected-3PLM was.infected-3PLF with-corona

    'The boy/ The girl/ The boys/ The girls could have been infected with coronavirus.'

    To make a theoretical sense of the lack of agreement features on epistemic *kaan* along the lines of the minimalist approach, we assume that *kaan* carries neither semantically uninterpretable features nor lexically unvalued features, so this modal item does not need to search in its c-command domain for any goal carrying a matching interpretable and valued features (Chomsky 2000, 2001). It is worth mentioning that mood and modality items in Arabic, in addition to other non-lexical categories, like tense, negation, and interrogation items, are known to be specified for some of the feature values of the categories of person, number, and gender or for none of these features (Bahloul 2008). It seems that *kaan* that is undergoing investigation belongs to the second group of non-lexical items referred to in Bahloul (2008).

While discussing the morphology of epistemic *kaan*, it should be recalled that this epistemic modal item may host a pronominal clitic, as exemplified above in (36) and in (44) below. One argument in favor of the pronominal status of such affixes is that they are referential; the pronominal clitic –*ha* in (44) denotes the subject of the clause. On the contrary, it is well-established for agreement affixes to be minimally referential (Ahmed 2015)

(44) KAAN-ha   bi-l-ʕijaadih.

could-she   in-the-clinic

'She could be in the clinic.'

To recap, it has been documented that the epistemic modal adverb *kaan* does not overtly express agreement in person, number, and gender features with any constituent in the clause in which it is found. The explanation for the absence of marking of such phi-features on *kaan*, within the framework of the minimalist approach, is that *kaan* does not bear any features to be valued. The only morphological item that may attach to *kaan* is a pronominal affix that first-merges immediately below *kaan*, and then incorporates into it.

4.3. kaan in Non-Assertive Contexts

An important fact that should be highlighted about epistemic *kaan* in JA is that it may not be found in non-assertive contexts, including a wh-question (45), a yes-no question (46), a protasis of a conditional (47), and an imperative (48), paralleling the cross-linguistic observations in McDowell (1987) and Drubig (2001) that report the exclusion of epistemic modals from such non-declarative sentences.

(45) wein   (*KAAN)   nis-jit   tilifon-ha?

where   could   forgot-3SGF telephone-3SGF.POSS

'Where could she have forgotten her telephone?'

(46) (*KAAN)   nis-jit   tilifon-ha   fi-l-maktab?

could   forgot-3SGF   telephone-3SGF.POSS   in-the-office

'Could she have forgotten her telephone in the office?'

(47) ʔiða(*KAAN)   nis-jit   tilifon-ha   fi-l-maktab,…

if   could   forgot-3SGF   telephone-3SGF.POSS   in-the-office

'If she could have forgotten her telephone in the office,...'

(48) (*KAAN)   tardʒim   r-risaalih.

could   translate   the-letter

'(*Could) Translate the letter.'

The explanation proposed in the current research for the incompatibility of epistemic *kaan* with non-assertive sentences, like (45-48), is with reference to the semantics of *kaan* and the semantics of non-declarative sentences. It is well-established for declarative sentences, like (49) below, to have truth conditions. Thus, (49) is either true or false; the statement here is true if she really has forgotten her telephone in the office, and false otherwise. On the other hand, non-declarative sentences are universally known not to have any truth-conditions (Iten 2000). Accordingly, there is no any context in which any of the non-declarative clauses above (45-48) can be judged true or false. Put differently, there are no

conditions set in reality in order to check the truthfulness of a wh-question, a yes-no question, a protasis of a conditional, or an imperative. This is what makes each of them incapable of being either true or false.

(49) nis-jit   tilifon-ha   fi-l-maktab.

       forgot-3SGF   telephone-3SGF.POSS   in-the-office

       'She has forgotten her telephone in the office.

As pointed-out in section 2, epistemic *kaan* semantically acts to indicate that an inference is deduced about the probability of a state or an action in the present, the past, or the future. Intuitively, if a state or an action is judged probable in the light of facts, it should be truth-evaluable. This indicates clearly that when a speaker expresses judgment, with *kaan*, about the probability of proposition, they commit themselves to the truth of that proposition (Song 2009). Hence, *kaan*, which suggests that a predicate probably comes true, is not appropriate with a wh-question, a yes-no question, a protasis of a conditional, or an imperative, where truth or otherwise cannot be judged.

To syntactically encode the incompatibility of epistemic *kaan* with non-declarative sentences, we will assume that *kaan* is licensed in the head position of MepP only if ForceP has the feature [+declarative], as schematized below.

(50)
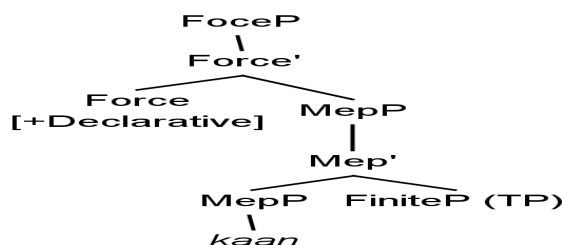
5. Conclusion

In this research, we have investigated the syntax of *kaan* in its epistemic use in JA. We have shown that epistemic *kaan* is a deductive modal marker. It takes a proposition in order to suggest its probability based on sense-based evidence. The fact that redundancy does not result if the probability established via *kaan* is later overtly asserted, and the fact that this probability may be cancelled without inducing contradiction follow directly under the assumption that *kaan* implicates, but does not assert, probability. Syntactically, we have argued that *kaan* is an epistemic modal adverb heading the functional category Epistemic Modal Phrase (MepP) in the left-periphery, above TP. In that position, it does not affect temporality, and it scopes over sentential negation that linearly has to follow. It precedes a clause in its unmarked word-order in JA, a topicalized constituent, a focused item, and an existential construction, and it may only be preceded with a topicalized constituent. In an attempt to explain the lack of agreement affixes on *kaan*, it was hypothesized, in terms of the minimalist programme (Chomsky 2000, 2001), that epistemic *kaan* does not carry any semantically uninterpretable features and lexically unvalued features, so it does not need to search for any goal carrying a matching interpretable and valued features. Finally, it

was found that epistemic *kaan* may not accompany non-assertive sentences. The account for such restriction was semantic as well as syntactic. Semantically, it was posited that *kaan*, which expresses probability, is not compatible with non-declarative clauses, as these clauses are not truth-evaluable. In order to syntactically capture this observation, we have assumed that epistemic *kaan* is licensed in the head position of MepP only if ForceP has the feature [+Declarative].

السمات النحوية للأداة التركيبيّة المعرفيّة "كان" في اللغة العربيّة الأردنيّة

حامد جرادات، محمد الملاحمة
قسم اللغة الإنجليزيّة وآدابها، جامعة مؤتة، الأردن

الملخص

تهدف هذه الدراسة إلى البحث في السمات النحويّة للأداة التركيبيّة المعرفيّة "كان" في اللغة العربيّة الأردنيّة. أوضح البحث أن "كان" هي أداة تركيبيّة معرفيّة استنتاجيّة تعبّر عن الاحتمالية بناءً على حقائق حسيّة. تبنينا موقفاً حاولنا من خلاله أن نثبت أن "كان" هي فعل مساعد معرفي مكانه هو في رأس التعبير المعرفي في المحيط الأيسر الخارجي، فوق العبارة المحدّدة زمنياً، ومن الإثباتات التي تدعم افتراض أن "كان" موقعها هو في المحيط الأيسر الخارجي هو أنها تسبق أداة "في" الوجودية وأداة النفي والمسند إليه وأي مادة تخضع للتوكيد، وفي محاولة لتفسير غياب المواد الصرفيّة التي تدل على المطابقة عن "كان" من منظور البرنامج الاختزالي لتشومسكي (2000، 2001)، افترضنا أنّ "كان" لا تحمل أيَّ خصائص دلاليّة غير قابلة للتأويل وأيَّ دلائل معجميّة غير مقيمة. وفي الختام، لوحظ أن "كان" لا تظهر في أي جمل غير إنشائية، وتم تفسير هذا الاستبعاد في ضوء شروط الحقيقة التي تفتقد إليها الجمل غير إنشائيَّة.

كلمات مفتاحيّة: صيغة، صيغة تركيب معرفي، المحيط الأيسر الخارجي، نحو، اللغة العربيّة الأردنيّة.

Endnotes

[1] Jordanian Arabic refers to the variety of Arabic used in the Hashemite Kingdom of Jordan in informal and daily situations, whereas Standard Arabic is used basically in media, religious services, education, and such formal contexts. Thus, the linguistic situation in Jordan, as well as in all Arabic-speaking countries, is described as being diglossic (Fergusson 1991). Jordanian Arabic exhibits variation in dialects, but mostly in phonology and morphology, without any significantly observed variation at the level of syntax (Abdel-Jawad 1986). The dialect used in constructing the representative data in the present research is the dialect used in the South of Jordan, which is the dialect of the researchers.

[2] The data constituting the corpus of the current research are glossed in agreement with the Leipzig glossing rules (https://www.eva.mpg.de/lingua/pdf/Glossing-Rules.pdf).

[3] This argument and the second one parallel the ones Iatridou (2000) employs in order to support the point that conditionals implicate counterfactuality.

[4] A survey of the syntax of existential constructions in different varieties of Arabic and English can be found in Alkulaib (2010).

[5] It is often disputed whether a preverbal subject in all varieties of Arabic resides in Spec, TP or in Topic position above TP. See Aoun et al. (2010) for more on these opposing hypotheses.

[6] See Aoun et al. (2010) for a review of the syntax of clitic left dislocation and focus in different varieties of Arabic.

[7] See Kamali and Büring (2011) for more on the prosody of topic.

References

Abdel-Jawad, Hassan. 1986. The emergence of an urban dialect in the Jordanian urban centers. *International Journal of the Sociology of Language* 61: 53-63.

Ahmed, Amer. 2015. On agreement affixes, incorporated pronouns, and clitics in standard Arabic. *SKY Journal of Linguistics* 28: 67-102

Alex-Tober, Katrin and Remus Gergel. 2016. Modality and mood in formal syntactic approaches. In Nuyts, Jan. and Johan Auwera (eds.). *Modality and mood,* 473-494. Oxford: Oxford University Press.

Alkulaib, E. 2010. *The acquisition of English and Arabic existential constructions.* Ph.D. diss., University of Kansas.

Alsarayrah, A. 2012. *The licensing of negative sensitive items in Jordanian Arabic.* Ph.D. diss., University of Kansas.

Aoun, Joseph, Elabbas Benmamoun, and Lina Choueiri. 2010. *The Syntax of Arabic.* Cambridge: Cambridge University Press.

Bahloul, Maher. 2008. *Structure and Function of the Arabic Verb.* London and New York: Routledge.

Chomsky, Noam. 2000. Minimalist inquiry: The framework. In Roger Martin, David Michael, and Juan Uriagareka (eds.). S*tep by step: essays on minimalist syntax in honor of Howard Lasnik,* 98-155. Cambridge, Mass: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In Kenstowicz, M. and Ken Hale (eds.). *A life in language,* 1-52. Cambridge, MA: MIT Press.

Cinque, Guglielmo. 1999. *Adverbs and Functional Heads: Across-Linguistic Perspective.* Oxford: Oxford University Press.

de Haan, Ferdinand. 2006. Typological approaches to modality. In Frawley, William., Erin Eschenroeder, Sarah Mills, and Thao Nguyen (eds.). *The expression of modality*, 27-70. Berlin: Mouton De Gruyter.

Drubig, Hans. 2001. *On the Syntactic Form of Epistemic Modality.* Unpublished manuscript, University of Tübingen.

Fassi-Fehri, Abdelkader. 1993. *Issues in the structure of Arabic clauses and words*. Dordrecht: Kluwer Academic Publishers.

Fassi Fehri, A. 2012. *Key features and parameters in Arabic Grammar.* Amsterdam: John Benjamins.

Ferguson, Charles. 1991. Diglossia Revisited. *South West Journal of Linguistics* 10: 214-234.

Giannakidou, Anastasia. 1999. Affective Dependencies. *Linguistics and Philosophy* 22: 367-421.

Hoye, Leo. 1997. *Adverbs and Modality in English.* London: Longman.

Iatridou, Sabine. 2000. The Grammatical Ingredients of Counterfactuality. *Linguistic Inquiry* 31 (2): 231-270.

Iten, C. 2000. '*Non-truth conditional' meaning, relevance and concessive*. Ph.D. diss., University College London.

Kamali, Beste and Daniel Büring. 2011. Topics in question. Workshop on the Phonological Marking of Focus and Topic, April 27, in GLOW, Vienna.

Karttunen, Lauri. 1972. Possible and Must. In Kimball, John (ed.). *Syntax and Semantics* 1: 181-193. New York: Academic Press.

McDowell, J. 1987. *Assertion and modality*. Ph.D. diss., University of Southern California.

Mohammad, Mohammad. 2000. *Word order, agreement and pronominalization in Standard and Palestinian Arabic* (Vol. 181). Amsterdam: John Benjamins.

Munro, Pamela. 2006. Modal expression in Valley Zapotec. In Frawley, William., Erin Eschenroeder, Sarah Mills, and Thao Nguyen (eds.). *The expression of modality*, 173-206. Berlin: Mouton De Gruyter.

Nuyts, Jan. 2006. Modality: Overview and linguistic issues. In Frawley, William, Erin Eschenroeder, Sarah Mills, and Thao Nguyen (eds.). *The expression of modality*, 1-26. Berlin: Mouton De Gruyter.

Ouhalla, Jamal. 1999. Focus and Arabic clefts. In Rebuschi, Georges and Laurice Tuller (eds.). *The Grammar of Focus*, 335-359. Amsterdam: Benjamins.

Palmer, Frank. 2001. *Mood and modality*. Cambridge: Cambridge University Press.

Perkins, Michael. 1983. *Modal expressions in English*. London: Frances Pinter; Norwood, NJ: Ablex Publishing.

Rizzi, Luigi. 1997. The fine structure of the left-periphery. In Webelhuth, G., (ed.). *Elements of grammar*, 281-337. Dordrecht: Kluwer Academic Publishers.

Song, Mean-Young. 2009. The Semantics of Epistemic Modality. *English Language and Linguistics:* 301-342.

Suzuki, Daisuke and Takashi Fujiwara. 2017. The Multifunctionality of 'Possible' Modal Adverbs: A Comparative Look. *Language* 93 (4): 827–841.