

## An Alternative Semantic Analysis of the Particle *fikil* in Jordanian Arabic

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**Abstract:** This paper revisits the semantics of the marker *fikil* in Jordanian Arabic (henceforth, JA) which has been analyzed as indirect evidential in previous literature (Al-Malahmeh 2013; Jarrah & Alshamari 2017, and others). The paper argues that *fikil* is a propositional-level rather than an illocutionary-level operator and therefore *fikil* is amenable to a modal analysis. The paper also provides evidence that epistemic modality system in JA can be finer-grained in terms of the propositions construed in the modal base as either logical reasoning-based or observable evidence-based. Such intriguing feature has been overlooked in possible world semantics (Kratzer 1991, 2012) but slightly reformed in the modal analysis advocated for *fikil* in this paper where the modal base is argued to construe a presupposition restricting the propositions in the modal base to observable evidence only. Cross-linguistically, the findings of the current paper lend further support to the unfolding literature that asserts the affinity and the heterogeneity of evidentiality and epistemic modality. At the same time, it poses serious challenge to the seminal works in evidentiality such as those of Aikhenvald (2004) and De-Haan (1999, 2004) who claimed that evidentiality is a homogenous category.

**Keywords:** epistemic modality, indirect evidentiality, Jordanian Arabic, possible worlds semantics, truth-conditional semantics

### 1. Introduction

There has been much debate in the current literature of semantics and pragmatics on whether there is a close relationship between evidentiality and epistemic modality as two major grammatical categories. This debate emerged from two overlapping conceptions of evidentiality: under the narrow conception, evidentiality is primarily concerned with the *source and type of information or knowledge*, i.e., the *evidence* that information or knowledge is based upon (Bybee 1985; Chafe and Nichole 1986; Willett 1988; Aikhenvald 2006; Speas 2008, among others). Evidentiality, based on this conception, comprises direct evidentiality, i.e., the speaker witnessed the event through direct evidence (visual, auditory, sensory) and indirect evidentiality, i.e., speaker did not witness the event, but knows about it through indirect evidence (sensory, visual/observable, hearsay, reportative, inference). Under the second and broad conception of evidentiality, on the other hand, evidentiality encompasses a speaker's attitude towards the proposition (P) of the utterance. In other words, the broad sense of evidentiality falls under the domain of epistemic modality since it encodes notions related to certainty, possibility, validity of propositions and speaker's commitment towards the truth of P s/he has

expressed (Ifantidou 2001; Rooryck 2001a,b; Palmer 2006).

Two approaches have been proposed in the current literature to address the link between evidentiality and epistemic modality under the two overlapping conceptions discussed above. The proponents of the first approach strenuously argued that evidentiality is a coherent closed-class system, independent of other systems of grammar such as epistemic modality (see e.g. Cinque 1999; de Haan 1999, 2002; DeLancey 2001; Lazard 2001; Aikhenvald 2004; Davis et al. 2007; Speas 2008). The second approach, on the other hand, claims that there exists a close relation between evidentiality and epistemic modality. Under this approach, many studies claim that evidential markers are subsumed under epistemic modality (Izvorski 1997; Garrett 2001; Rooryck 2001; McCready & Asher 2006; Matthewson et al. 2007; Palmer 2006; McCready & Ogata 2007; von Stechow and Gillies 2007; Rullmann et al. 2008; von Stechow and Iatridou 2009; Peterson 2010).

The current paper revisits the semantics of the marker *fikil* ‘it looks like/apparently’ in Jordanian Arabic (henceforth, JA) which has been analyzed in previous literature as pure/lexical indirect evidential (Al-Malahmeh 2013; Jarrah & Alshamari 2017 and others). Contra to previous literature, we argue that the marker *fikil* introduces a quantification over possible worlds with variable quantificational force and is restricted to epistemic conversational backgrounds. Therefore, the marker *fikil* is better accounted for as an epistemic modal rather than a pure lexical indirect evidential as illustrated in (1) below where the interpretation of marker *fikil* can be recaptured by the canonical epistemic modals in JA *mumkin* ‘may’ and *?akeed* ‘must’.

(1) *fikluh/mumkin/?akeed*    *?edza*  
 EV    may    must    come-PAST-3SG.M

‘It looks like/it is possible /it is necessarily possible that he has come.’

Interpretation: It is possible or necessarily possible that he has come.

Furthermore, the current paper challenges the pragmatic assumptions upon which the evidential interpretation of the marker *fikil* is based. We argue that the evidential requirement of the marker *fikil* is a *semantic presupposition* contra to previous analyses such as Jarrah and Alshamari (2017). The presuppositional nature of the indirect evidence is supported by the fact that the evidence requirement scopes out of negation as demonstrated in (2).

(2) *ma fikilha fattaayeh*  
 Not    EV    rain-PART-3.SG.F

‘It does not look like it is going to rain.’

= There is evidence that  $\neg$  P.

$\neq$  There is no evidence that P.

Cross-linguistically, the findings of the current paper lend further support to the unfolding literature that asserts the close relationship between evidentiality and epistemic modality. At the same time, it poses serious challenge to the seminal works in evidentiality such as those of Aikhenvald (2004) and De-Haan (1999, 2004) who claimed that evidentiality and epistemic modality are two separate categories. Under the alternative semantic account of the marker *fikil*, the current paper has two more major theoretical contributions as well. First, the paper attempts

to locate the epistemic modal *fikil* within the epistemic modality system in JA. We will show that epistemic modality system in JA splits into two realms: logical reasoning-based inference and observable evidence-based inference; a feature that has fundamental theoretical implications on the semantics of modality in JA in particular and in Arabic dialects in general, i.e., it turns out that distinguishing between the types of evidence involved in epistemic reasoning is of paramount significance for natural languages. Ordinary epistemic modals such as *yemkin/mumkin* ‘may’ and *ʔakeed* ‘must’ require logical and objective reasoning (i.e., speaker infers P (i.e., death) based on pure mental reasoning such as basic intuition, logic, experience or other mental constructs) as in (3) and (4). However, in (5), *fikil* requires more restricted facts (i.e., some observable evidence or results of the causing event of death upon which the inference is made by the speaker), the lack of such evidence yields sentence (5) anomalous.

(3) kul ʔensaan ʔakeed raḥ y-moot  
 every human must will-FUT INF-3.S.M-die  
 ‘Every human must die sometime.’

(4) kul ʔensaan yemkin ʔay laḥḏʕa y-moot  
 every human may any moment INF-3.S.M-die  
 ‘Every human may die any moment.’

(5) # kul ʔensaan fakluḥ raḥ y-moot  
 every human EV will-FUT INF-3.S.M-die  
 ‘Every human must die sometime.’

Lastly and interestingly, it is cross-linguistically attested that most Indo-European languages (e.g., English) lexicalize the quantification force and contextualize the modality base; however, the epistemic modal *fikil* stands in a sharp contrast with this Kratzerian typological perspective on modality because *fikil* simply does the opposite: it lexicalizes the modal base and leaves the quantificational force to the context (i.e., variable quantificational force). The variability of quantificational force poses a challenge for the standard analysis of modality, where the strong/weak dual corresponds to a fixed universal/existential quantification over the modal base (i.e., either strong or weak but not both).

The structure of the paper is as follows. Section 2 provides an overview of previous literature on the semantics of *fikil*. In section 3, we lay out our modal proposal for *fikil*. To this end we discuss levels of meaning: Truth-Conditional vs Non Truth-Conditional where we provide a battery of empirical tests and diagnostics to determine whether the marker *fikil* operates at the illocutionary or propositional level. Section 4 addresses the presuppositional nature of the evidence type requirement of the marker *fikil*. Section 5 introduces a novel perspective on the epistemic modality system in JA. In this section, we propose a comprehensive semantic dichotomy within the epistemic modality system in JA: a logical reasoning-based vs observable evidence-based inference. This dichotomy is further investigated in terms of modal base and quantificational force. Section 6 concludes the paper.

## 2. Previous studies on the marker *fikil*

Al-Malahmeh (2013) provided a detailed semantic analysis of the marker *fikil* in JA. He argued that *fikil* is an indirect evidential predicate and that the indirect evidentiality of this marker is lexically specified, i.e., expressed morphologically by distinct morphemes or by “evidential probers” (After Aikhenvald 2004). According to this analysis, *fikil* is similar to other lexicalized evidential systems cross-linguistically. For instance, Cuzco Quechua morphologically expresses distinct sources of information by using evidential suffixes and enclitics which can attach to almost any syntactic category as illustrated in (6a-c) below (P stands for proposition, EV stands for evidential interpretation) (Faller 2002).

- (6) a. pilar-qa t’anta-ta-n mikhu-rqa-n  
 Pilar-TOP bread-ACC-*mi* eat-PAST1-3  
 P= ‘Pilar ate bread  
 EV= **enclitic *mi***: Speaker saw P. (Faller 2002:18)
- b. Lima-ta-n viaja-n  
 Lima-ACC-*mi* travel-3  
 P= ‘She travelled to Lima.’  
 EV= **enclitic *mi***: Speaker was told that P. (Faller 2002:19)
- c. Mana-n muchila-y-pi-chu ka-sha-n  
 not-*mi* backpack-1-LOC-NEG be-PROG-3  
 P= ‘It is not in my backpack.’  
 EV= **enclitic *mi***: Speaker infers P. (Faller 2002:19)

Another argument Al-Malahmeh (2013) provides for the indirect evidential reading of *fikil* comes from the infelicity of *fikil* in the contexts where the speaker perceived the event as illustrated in (7a-d) (Al-Malahmeh 2013:215).

- (7) a. **Context: Adam enters the room and sees Majdi watching T.V. Adam joins Majdi in watching T.V. Suddenly, the phone rings (as Sami is calling) and Adam answers the phone.**
- b. mazdi juu besawwi?  
 Majdi what IMPERF-do.3SG.MASC  
 ‘What is Majdi doing?’
- c. gaʕid betfarradz ʕala t-telfezyon  
 PROG IMPERF-watch on the-T.V  
 ‘He is watching T.V.’
- d. #ʕikluh gaʕid betfarradz ʕala t-telfezyon  
 It looks like PROG IMPERF-watch on the-T.V  
 ‘It looks like he is watching T.V.’

Contra to this analysis, we argue that the indirect evidential requirement of the marker *fikil* is presuppositionally encoded. This is supported by the fact that the evidence requirement still holds whether P (prejacent: embedded proposition of *fikil*) or the marker *fikil* is negated or not as in (8-10).

- (8) ʕikluh d-denya bteʕti  
 EV the-sky IMPERF-rain-3SG.F

‘It looks like it is raining.’  
= There is evidence that P

- (9) *ʃikluh d-denya ma btefti*  
EV the-sky not IMPERF-rain-3SG.F  
‘It looks like it is not raining.’  
= There is evidence that ¬ P  
≠ There is **no** evidence that P

- (10) *ma ʃikilha ʃattayeh*  
Not EV rain-Active Participle-3SG.F  
‘It does not look like it is going to rain.’  
= There is evidence that ¬ P (not P)  
≠ There is **no** evidence that P

In other words, only P is targeted by negation. This feature is reminiscent in presuppositional readings where q still holds even if p is negated as in (11a and b). We shall discuss the presuppositional nature of the evidential reading of *ʃikil* as well as examples such as (8-10) above with more details in section 4.

- (11) a. Adam stopped smoking (p), Adam used to smoke (q)

- b. Adam did not stop smoking (p), Adam used to smoke (q)

Drawing on the findings of the indirect evidential proposal of Al-Malahmeh (2013), Jarrah and Alshamari (2017) investigated the semantic and syntactic status of the marker *ʃikil* in JA. They argued that *ʃikil* heads Mood<sub>evidential</sub> Phrase (cf. Cinque 1999) and that the marker *ʃikil* expresses an indirect evidential reading. In their study, they posit two major arguments regarding the semantic status of *ʃikil* as an indirect evidential. First, they claimed that *ʃikil* is *not an assertion marker* based on the assumption that it is felicitous under a cancellation/deniability test (Murray 2010) as illustrated in (12) below (Jarrah et al. 2017: 33).

- (12) *ʃikil-ha b-tifti bas ʔana muʃ ʔimsʔaddig*  
Prt-3sg.f imper-rain.3sg.f but I neg believing  
‘It is apparently raining, but I do not believe that’.

It was concluded, therefore, that *ʃikil* is an evidential marker and not an epistemic modal and that *ʃikil* presents but not to assert propositions as clearly stated in their paper “We suggest though that *ʃikil* is in essence an evidential particle rather an epistemic particle as the speaker uses it to emphasize the fact that he resorts to indirect evidence as an information source for his proposition rather than making judgements on the factual status of the proposition, i.e., the speaker does not convey how low or high his certainty is” (Jarrah et al. 2017: 33-34). However, we argue that while the test in sentence (12) above was initially used to support evidential analysis according to Jarrah et al. (2017), the very same test indirectly provides evidence for the otherwise: an epistemic modal analysis. This is due to the fact that sentence (12) clearly indicates that the speaker is not committed to the truth of P, that is why a continuation that asserts the uncertainty of P on the part of the speaker is still felicitous (see Murray 2010; Déchaine et al. 2017 for further

details).<sup>1</sup> The lack of the speaker's commitment towards the truth of P is the locus of what epistemic modality expresses. Furthermore, if we know that epistemic modality encodes the speaker's judgement/commitment of the truth of the proposition expressed as *necessary true* (epistemic necessity) or *possibly true* (epistemic possibility) in light of what the speaker knows (Palmer 2001; Kearns 2000 among others), then it follows that the marker *fikil* in sentence (12) above is a perfect example of epistemic modality. This is because JA speakers intuit that the interpretation of (12) corresponds to (13) rather than (14). The former indicates that P (raining) is *possibly true* (speaker is drawing on assumptions that do not attain a confident knowledge and therefore triggering epistemic flavor or lack of certainty); whereas the latter indicates that P *is true*.

(13) It is possible that it is raining outside, P is possibly true.

(14) It is raining outside, P is true.

In fact, the speaker in (12) still does not commit him/her(self) to the truth of P (i.e., P is possibly true rather than true) even if sentence (12) is infelicitous under a deniability test. Furthermore, we argue that the cancellation test in (12) does not suffice to preclude a modal analysis. We contend that the cancellation statement in (12) does not target P (prejacent/raining), it rather targets the modal/inferential claim of the marker *fikil* (i.e., *it is possible that P*). That is why this sentence triggers an epistemic modal reading, i.e., it casts doubt about the speaker's commitment or degree of certainty regarding P. This is supported by the fact that if the cancellation statement targets P, this yields the sentence infelicitous as shown in section (3.1.2). In other words, we know that sentence (12) is felicitous and we know that if cancellation targets P itself this yields the sentence infelicitous. It follows then that the felicity of (12) is a result of the cancellation test targeting the modal/inferential claim of *fikil* rather than P. Additionally, sentence (12) is still felicitous under cancellation test even when the marker *fikil* is not used as in (15 and 16). In (15), P (raining) is asserted to be true therefore any continuation that asserts the otherwise should yield infelicity due to semantic contradiction (Moor's Paradox (Karttunen 1972)). However, (16) is still felicitous; which clearly indicates that the continuation statement targets the modal claim (i.e., *degree of speaker's belief* in P) rather than P itself.

(15) # gaʕdeh      b-tifti      barra      bas      ma      b-tifti      barra  
 PROG imper-rain.3sg.f outside      but      neg imper-rain.3sg.f outside  
 'It is apparently raining outside, but it is not raining outside.'

(16) gaʕdeh      b-tifti      barra      bas      ʔana      muf      msʔaddig  
 PROG      imper-rain.3sg.f outside      but      I      neg believing  
 'It is apparently raining outside, but I do not believe that.'

In the next section (section 3), we provide more arguments and ample evidence based on well-attested and cross-linguistic semantic diagnostics that *fikil* is indeed a truth-conditional, i.e., a propositional-level operator and therefore is better analyzed as an epistemic modal contra to Jarrah et al. (2017)'s contention that *fikil* is not an assertion particle.

Second, based on the data given in (12), Jarrah et al. (2017) argued that the marker *fikil* implicates an evidential reading based on which the speaker relies on second-hand evidence whose presence is not sufficient to assert P introduced by *fikil*. However, we already argued that the evidential requirement of *fikil* is presuppositionally driven as shown in (8-11 above). In section 4, we will come back to this point and provide counterarguments to the implicature-based reading of the evidential requirement of *fikil* and show that such analysis does not hold up to close scrutiny.

### 3. An Alternative Modal Analysis of *fikil*

Our alternative modal analysis is based on ample body of empirical evidence and well-attested diagnostics illustrated in sections 3.1 and 3.2. we argue that the findings of these tests and arguments clearly show that the semantics of *fikil* is amenable to a modal analysis contra to previous literature such as Al-Malahmeh (2013) and Jarrah et al. (2017). Cross-linguistically, the results of these tests lend further support to the recent unfolding consensus in the semantic literature that some natural-language evidentials are epistemic modals (Izvorski 1997; Garrett 2001; Faller 2006; Matthewson et al. 2007; McCready and Ogata 2007; Peterson 2010 and others). At the same time, it poses serious challenge to the seminal works in evidentiality such as those of Aikhenvald (2004) and De-Haan (1999, 2004) who claimed that evidentiality and epistemic modality are two categories of discernable differences.

#### 3.1 Levels of meaning: Truth-value diagnostics

In order to determine the level of meaning an evidential operates at, some well-attested diagnostics have been proposed in the literature (Chierchia and McConnell-Ginet 1990; Papafragou 2000, 2006; Garret 2001; Faller 2002, 2003, 2007; Matthewson et al. 2007; Waldie et al. 2009; Peterson 2010; Lee 2011 among many others). This battery of diagnostics provides a methodological foundation for determining whether the evidentials in a given language should be formally treated as a propositional-level operator (i.e., contribute to the truth-condition) or an illocutionary-level operator (i.e., does not contribute to the truth-condition) which correspond to a modal or non-modal analysis respectively. The tests have been classified into two parts: truth-value (section 3.1.1 and 3.1.2) and projection diagnostics (embeddability diagnostics/section 3.1.3).

In this section, we examine whether *fikil* is a propositional (modal) or illocutionary (non-modal) operator. To this end, we apply these diagnostics and conclude that *fikil* is a propositional-level operator and therefore analyzed as a modal operator. We further support the modal proposal by comparing the results of these diagnostics with English epistemic modals and two other types of attested evidentials in the literature whenever possible: evidentials in Cusco Quechua as in Faller (2002, 2006 and 2007) which have been analyzed as illocutionary operators and evidentials in St'át'imcets as in Matthewson et al. (2007) which have been analyzed as epistemic modals i.e., propositional level operators.

**3.1.1 (In)felicity if embedded proposition is known to be true/false**

An analysis of *fikil* as epistemic modals predicts that *fikil* will be infelicitous in contexts where the speaker is sure that P (prejacent/embedded proposition) is true or false. This is because epistemic modals are usually used to express a proposition that is *not known* to the speaker. In fact, that is the major function of modals: they express propositions that are *possibly* or *necessarily* true as is the case for instance in English epistemic modals (17 and 18) respectively.

(17) It may be raining.

◇P: It is possible that it is raining.

(18) It must be raining.

□P: It is necessarily possible that it is raining.

If the speaker knows that P is false, this yields infelicity as illustrated in (19), this test has been known in the literature as Moor's Paradox (Karttunen 1972; Faller 2002:191).

(19) # It may/must be raining, but it is not (raining).

Similarly, the inferential evidential *k'a* in St'át'imcets which has been analyzed as an epistemic modal yields infelicity in the contexts where P is known to be false or true by the speaker as evident in example (20) (Matthewson et al. 2007: 213, 216). The reportative evidential *si* in Quechua, on the other hand, has been accounted for as a speech act operator (non-modal operator) (Faller 2002). The evidential *si* is felicitously used even when the speaker knows that P is true or false (see Faller 2002 for examples and details).

(20) # wa7 k'a kwis, t'u7 aoz t'u7 k-wa-s kwis

IMPERF INFER rain but NEG just DET-IMPERF-3poss rain

'It may/must be raining, but it's not raining.'

We argue that the marker *fikil* shows a parallel semantic behavior with epistemic modals in English and the evidential *k'a* in St'át'imcets with regards to the infelicity of the utterance if P is known to be true or false. The fact that the speaker knows that P (raining) is false yields sentence (21), where *fikil* is used, infelicitous. The same fact holds for sentences (22b and c) where the speaker has a first-hand knowledge that P (raining) is true; sentence (22b), where *fikil* is not used, is felicitous, yet the use of *fikil* yields the same sentence (22c) infelicitous.

(21) # fikluh d-denya btefti, bas heyyeh ma btefti  
EV the-sky IMPER-3.F.S-rain-F but it not rain  
'It looks like it is raining, but it is not raining.'

(22) a. **Context: the speaker is looking directly at the sky and he perfectly sees that the sky is raining heavily.**



b. d-denya btefti  
 the-sky IMPER-3.F.S-rain-F  
 ‘It is raining.’

c. # fikluh d-denya btefti  
 EV the-sky IMPER-3.F.S-rain-F  
 ‘It looks like it is raining.’

The argument of “known P” by the speaker is also consistent with the so-called ‘Non-equi subject constraint’ reported in the literature (e.g. Song 2002, Chung 2005, Lee 2011). The constraint specifies that the subject of an epistemic modal and consequently *fikil* sentence cannot be the speaker if he/she knows that P is true or false. We take this argument as a further supportive evidence for a modal analysis of *fikil*.

It is well-attested semantically that epistemic modals (even epistemic necessity modals) assert a weaker claim (i.e., weaken the proposition) as illustrated in (16b) as compared to non-modalized structures as in (16a) below (Karttunen 1972; Kratzer 1991; Papafragou 2006; Von Stechow et al. 2007). Evidentials, on the other hand, sometimes serve to strengthen rather than weakening the statement (see Fallner 2002; Speas 2008). In a similar vein, we argue that *fikil* in JA asserts a weaker claim (i.e., weaken the proposition) when compared to a non-modalized utterance as illustrated in (23 and 24). In this respect, *fikil* has equivalent semantic function to epistemic modals cross-linguistically and to the canonical epistemic modals in JA, *mummkīn/yemkīn/bejooz* ‘may/it is possible’, in that they all weaken the assertion of propositions as exemplified in (25-27).

(23) John has left.

= It is *true* that he left.

(24) John may have left.

= It is *possibly true* that he left.

(25) ?adam ?edza

Adam 3.S.M-come

‘Adam came.’

= It is *true* that Adam came.

= Speaker asserts, that is, presents as true that he came.

(26) fikluh ?adam ?edza

EV Adam 3.S.M-PAST-come

‘It looks like Adam came.’

= It is *possibly true* that Adam came

= Speaker believes that he came without claiming that this is a fact.

- (27) **Yemkin**      ʔadam      ʔedʒa  
 May              Adam      3.S.M-PAST-come  
 ‘Adam may have come.’  
 = It is *possibly true* that Adam came.  
 = Speaker believes that he came without claiming that this s a fact.

### 3.1.2 Assent/Dissent

One cannot challenge (disagree, question, doubt) the propositional content contributed by an illocutionary operator because a speech act does not have a truth value but one can with propositional-level operators such as epistemic modals since they contribute to the truth-condition of the proposition of the utterance (Faller 200,2006; Papafragou 2006). The challengeability test facts support a modal analysis of the marker *fikil* as shown in (28a-c) where the evidential/modal claim rather than the prejacent per se (the embedded proposition) is targeted by the negation, adapted from (Matthewson et al. 2007; Al-Malahmeh 2013:293).

- (28) a. **Context: Majdi is out of town. Adam and Sami approach Majdi’s house and see that the light is on. ( Adam says (28) b, and Sami says (28) c).**

b. **fikluh**      maʒdi ʔedʒa,      ʔetʕalaʕ      haai eðʕwaw      ðʕaawyeh  
 EV              Majdi come-DA, look      these light.PL      light-DA  
 ‘[It must be the case that] Majdi has come; all the lights are on.’

c. muf ʃartʕ /sʕaʕeɛh;      maʒdi      dayman      bensa      eðʕwaw  
 not necessary/true;      Majdi      always      IMPERF- forget      light  
 ðʕaawyeh      lamma      yetʕalaʕ      barra  
 light-DA      when      go-IMPERF-3SG      outside  
 ‘Not necessarily true, Majdi always forgets the lights on when he goes outside.’

- **Sami’s statement = ‘It is not true that Majdi *must* have come home.’**

- **Sami’s statement ≠ ‘Majdi has not *come* home.’**

A further support for the epistemic modal analysis of *fikil* in this respect comes from the fact that *fikil* can be felicitously replaced with the canonical epistemic necessity modal in JA *ʔakeed* ‘must’, yielding the same finding and interpretation given in (18b) as intuited by JA speakers. Cross-linguistically, *fikil* behaves similarly (under the assent/dissent test) to epistemic modal evidentials such as the inferential evidential *k’a* in St’át’imcets which similarly allows the evidential or modal claim to be challenged (Matthewson et al. 2007). Yet, it differs from the reportative evidentials in Quechua which have been analyzed as illocutionary operators since they fail this test (see Faller 2002:11 for more examples and discussion).

It is worth mentioning that the truth-value diagnostics still has another test, that is, the cancellability of evidence requirement. We shall discuss this test in section 4 as it is highly relevant to the presuppositional nature of the evidence type requirement encoded by *fikil*.

### 3.1.3 Projection diagnostics: Embeddability

The embeddability test states that “an illocutionary operator cannot be semantically embedded, i.e., understood as part of the propositional content of an embedded clause, but a modal can.” (Peterson 2010:119). If the evidential can be embedded under conditional sentences, factive attitude or reporting verbs, a propositional-level operator then it is understood as contributing to the propositional content and therefore analyzed as modal operator not an illocutionary operator (Faller 2002, Matthewson et al. 2007 and others). The findings of this test motivate a modal analysis of the marker *fikil* as can be seen in the following sentences.

- (29) **fikluh** leen ʔelli ɖʕarabt farah  
 EV Leen who hit-3.S.F Farah  
 ‘It looks like it is Leen who hit Farah.’

= According to the speaker, it is possible that it is Leen who hit Farah.

- (30) deema betguul ennuh **fikluh** leen ʔelli ɖʕarabt farah  
 Dima IMPER-3.S.F-say that EV Leen who hit-3.S.F Farah  
 ‘Dima says that it looks like it is Leen who hit Farah.’

≠ According to the speaker, it is possible that it is Leen who hit Farah.

= According to Dima, it is possible that it is Leen who hit Farah.

- (31) ʔeða **fikilha** ʕattayeh, maʕnatuh raḥ nelyi l-mefswaar  
 if EV rain-PP, mean-it will PL.M.1-cancel the-visit  
 ‘If it looks like it is going to rain, then we will cancel our visit.’

= If  $\Diamond P$ , then we will cancel our visit.

The shiftability of anchoring in (29 and 30) supports a modal analysis of *fikil*. This observation is obtained by the fact that the interpretation of sentence (29) is indexical where the inferential claim of *fikil* is construed as referring to the speaker of the sentence. Suddenly, the anchoring shifts to the subject of the matrix clause (i.e., Dima) when *fikil* embeds under a reporting verb as in (30). In other words, in (30) the inferential claim of *fikil* is semantically embeddable in that it is interpreted within the scope of the reporting verb *betguul* ‘say’. A similar observation is born out in (31) where *fikil* is used in the antecedent of the conditional and the inferential/modal claim of *fikil* has a narrow scope with respect to the wide scope of the conditional.

In addition, the marker *fikil* semantically embeds under other propositional-level operators such as the causal connective *leʔanuh* ‘since’ as in (32): what the speaker says in (32) is that she is going home *since* she *thinks it’s possible* that her husband is coming home soon. If *fikil* is an illocutionary operator it should scope out of the causal connective, a result that is not born out in (32). In this respect, *fikil* bears a semantic resemblance to the canonical epistemic modal in JA, *yemkin* ‘may’ (33) and to epistemic modals in English (34) (Papafragou 2000:7).

- (32) xaleeni ʔaraweḥ ʔatʕbux leʔanuh **fikluh** yusif raḥ  
 Let-me go cook since EV Yousef will

yedzi           ʔay           laaħðʕa  
 come           any           moment  
 ‘I am going home to cook since Yousef may come home any moment.’

- (33) Xaleeni       ʔaraweh     ʔatʕbux     leʔanuh     **yemkin**     yusif rah  
 Let-me       go           cook       since       may       Yousef will  
 yedzi       ʔay       laaħðʕa  
 come       any       moment  
 ‘I am going home to cook since Yousef may come home any moment.’

- (34) I am going home since my son may come to visit.

It is worth mentioning that the projection diagnostics still have two other tests, scope with respect to interrogative and scope with respect to negation. The former will be ruled out due to the fact that the two competing analyses, the modal vs illocutionary, predict the same results and therefore they converge in this respect and will not be helpful to our purpose (see Matthewson et al. 2007; Murray 2010; Peterson 2010). The latter, on the other hand, will be discussed thoroughly in section 4.

### 3.2 Parallelism with epistemic modals

In this section, we provide other supportive arguments for the proposed modal analysis, particularly: modal subordination and the notion of possible worlds (factual vs non-factual) interpretation. All of which motivate a parallel semantic behavior of *fikil* with the epistemic modals in JA as well as modals cross-linguistically (e.g., English, Japanese, Korean, German).

One of the well-attested semantic behavior of epistemic modality cross-linguistically is that they behave like an escape-window of what seems to be a semantic contradiction. This is based on the premise that modals express a proposition that holds in a possible world other than the real/actual world and that this possible world might hold a truth-value that is different from the real world. In other words, we still judge a modalized sentence to be true even though it might not be conformed by the real world, simply because the real world is not necessarily one of the accessible worlds. To put differently, the primary function of modals is to enable us to talk about possibilities and necessities. We can talk about a multitude of ways in which the real world *should* be or how it *might* have been, had some conditions took place or did not take place, etc. This powerful means to go beyond here, now and directly observable facts indeed lies at the heart of the meaning of modality, and is neatly and formally accounted for by invoking the notion of ‘possible worlds’ (cf. Kripke 1963; Lewis 1973; Kratzer 1981, 1991, Hacquard 2006, among others). Having said so, we argue that *fikil* captures this intrinsic meaning of modal expressions. Consider sentences in (35 and 36) below.

- (35) qais   wu   dzuli rah           yedzu       ʕala l-ʕoros           l-yom?  
 Qais   and   Julie will-FUT   come-INF   to   the-wedding       today?

‘Are Qais and Julie coming to the wedding today?’

(36) **fikluh** heik! ma baʃref bezzabtʃ.  
 EV this!, not IMPERF- know.1.S.F exactly  
 ‘It seems so! I do not know exactly.’

This is a dialogue between Adam (35) and Deema (36). Note here that Deema’s statement (sentence (36) with *fikluh*) has not stated that P (Qais and Julie coming to the party) is true (i.e., a situation that holds true in the real world); rather she has merely expressed a certain degree of commitment to P. Surely, by the same token, she affirmed that there is a possibility they will go to the wedding (i.e., a *possible world* in which Qais and Julie come to the wedding). This interpretation hinges on the premise of how modals behave as illustrated in the preceding paragraph. It is not, yet, clear how such interpretation can be unequivocally challenged by a non-modal (non-propositional) view; not to mention that such non-modal view cannot handle the frequent cases where the marker *fikil* occurs unaccompanied by other overt propositional operators.

In fact, stripping the propositional content (P) of Deema’s statement (36) above from the epistemic modal operator results in an unwanted semantic contradiction where P holds two different truth-values at the same time. Let us demonstrate: What Adam should conclude from Deema’s statement in (36) is the interpretation given in (37):

(37) Qais and Julie may come; however, they may not come (as another possibility).

(38) a. # P & ¬ P

b. (◇P) & (◇¬ P)

If *fikil* is not an epistemic modal and therefore does not contribute to propositional content, then the proposition expressed by (37) will yield the semantic notation in (38 a), which is a semantic contradiction. If, on the other hand, *fikil* is an epistemic modal and therefore admitted into the truth-conditional content of Deema’s statement in (36), then we end up with the non-contradictory notation (38 b): *fikil* here is epistemically interpreted in which the speaker’s *belief* is compatible with the proposition that Qais and Julie come to the wedding, as well as with the proposition that they do not. In other words, we still judge Deema’s statement to be acceptable even if Qais and Julie decided not to come to the wedding; this cannot be tenable unless *fikil* is an epistemic modal.

A further support of modal analysis of *fikil* comes from modal subordination phenomenon: it requires an anaphora to be in the semantic scope of its antecedent (Roberts 1987, 1989). In other words, the discrepancy in the quantificational interpretation between the antecedent (modalized) and the consequent (unmodalized) sentences block anaphoric dependency as shown by the infelicity of (39). However, such observation contrasts with (40) where the antecedent sentence and the anaphora sentence belong to the same quantificational interpretation (i.e.,

they include a modal element); therefore, the anaphoric dependency is permitted and results in the felicity of (40). Examples are taken from Roberts (1989:697).

(39) A thief<sub>i</sub> might break into the house. #He<sub>i</sub> took the silver.

(40) A thief<sub>i</sub> might break into the house. He<sub>i</sub> would take the silver.

This prediction is true for *fikil* as in (41b) as contrasted to the perfective form in JA (41c). Given the observable evidence (i.e., his room being messy and the small window is half open), the speaker believes/hypothesizes that a thief broke into the house; however, the speaker does not commit himself to the truth of P in the actual world. This low degree of certainty on the part of the speaker blocks anaphoric dependency unless the consequent sentence is modalized. The fact that (41b) is felicitous (anaphoric dependency is allowed) clearly shows that the consequent sentence has a modal operator (i.e., *fikil*), otherwise the sentence should be infelicitous due to the lack of modal operator in the consequent as in (41c). *fikil* bears a semantic resemblance with the epistemic modals *yemkin* ‘might’ and *?akeed* ‘must’ in JA (41d). We take this parallel behavior with *yemkin* as a further argument for the modal analysis advocated here. The same facts also hold for German modal *sollen* (see Faller 2006), Korean modals *-te* and *-ney* (see Lee 2011 and Chung 2005), Japanese modals *rashii*, *mitai*, *yoo* (see McCready et al. 2007).

(41) a. **Context: When Adam and Dima got home, they found their room in chaos and all their belongings scattered on the floor. They found a small window in the room left half- open. Now, Adam says:**

b. *?akeed*    *fee*    *waħad<sub>i</sub>*    *faayet*    *ʕad-daar.*    *ʃikluħ<sub>i</sub>*    *kaayen*  
 Must    there    one    PART-got    in the-house. EV    was  
*gas<sup>ʕ</sup>eer*    *?elli*    *gader*    *yfoot*    *min*    *eʃ-ʃubaak*  
 short    that    PAST-can    INF-get in    from    the-window  
 ‘Someone must have broken into the house. It looks like he was short to use this small window.’

c. *?akeed*    *fee*    *waħad<sub>i</sub>*    *faayet*    *ʕad-daar.*    # *kaan<sub>i</sub>*    *gas<sup>ʕ</sup>eer*  
 Must    there    one    PART-got    in the-house. Be-was    short  
*?elli*    *gader*    *yfoot*    *minuħ.*  
 that    can    enter    from-it  
 ‘Someone must have broken into the house.# He was short to use this small window.’

d. *yemkin*    *fee*    *waħad<sub>i</sub>*    *faayet*    *ʕad-daar.*    *?akeed*  
 May    there    one    PART-got    in the-house. Must  
*kaayen<sub>i</sub>*    *gas<sup>ʕ</sup>eer*    *?elli*    *gader*    *yfoot*    *minuħ*  
 Be-was    short    that    can    enter    from-it  
 ‘Someone might have broken into the house. He must be short to use this small window.’

In sum, the findings of the aforementioned arguments call for a reanalysis of *fikil* as an epistemic modal. We take this conclusion as the basis of our arguments regarding the type of evidence induced in the semantics of *fikil* in section (4) and the semantic analysis of epistemic modality in JA in section (5).

#### 4. The evidence type requirement

We argue that *fikil* is an epistemic modal that incorporates a secondary evidential component in its semantics (cf. Von Stechow et al. 2007). We further argue that the evidence requirement is presuppositionally specified contra to previous analyses (Al-Malahmeh 2013; Jarrah et al. 20017). The presuppositional nature of the indirect evidence is supported by the fact that the evidence requirement scopes out of negation as demonstrated in (8-10), repeated here as (42-44).

(42) *fikluh d-denya btefti*  
 EV the-sky IMPERF-rain-3SG.F  
 ‘It looks like it is raining.’  
 = There is evidence that P.

(43) *fikluh d-denya ma btefti*  
 EV the-sky not IMPERF-rain-3SG.F  
 ‘It looks like it is not raining.’  
 = There is evidence that ¬ P.  
 ≠ There is **no** evidence that P.

(44) **ma** *fikilha fattayeh*  
 Not EV rain-Active Participle-3SG.F  
 ‘It does not look like it is going to rain.’  
 = There is evidence that ¬ P (not P).  
 ≠ There is **no** evidence that P.

Similarly, and not surprisingly, the data also reveals that the indirect evidence requirement of *fikil* is not cancellable as well and therefore supports the semantic presupposition analysis of evidence requirement (Izvorski 1997, Matthewson et al.2007). In (45b), embedding *fikil* in a context (45a) where the event is perceived by the speaker (i.e., direct evidence rather than indirect evidence is asserted) yields the sentence infelicitous. The non-cancellability of evidence requirement rules out an implicature-based analysis of the evidence type as advocated by previous analyses such as Jarrah et al. (2017).

(45) a. **Context: Adam and Sami are looking directly and clearly at their friend, Yousef, while he is parking the car. While Adam is still looking at Yousef and therefore witnessing the whole event of parking, he says to Sami:**

b. # *ʃuuf!*    *ʃikluh*    *yusif*    *gaaʃed*    *besʃuf*    *fs-sayyarah*  
 Look!    EV-him    Yousef    PROG    park-3.S.M    in the-car  
 ‘Look! It looks like Yousef is parking the car.’

The non-cancellability and the scopal property with respect to negation are reminiscent in presuppositional readings where *q* (the presupposed sentence) still holds even if *p* (the presupposing sentence) is negated as in (46 and 47).

(46) *p*: Sarah’s husband is a fool. *q*: Sarah has a husband.

(47) *p*: Sarah’s husband is not a fool. *q*: Sarah has a husband.

### 5. Epistemic modality in JA

Drawing on section 4, we can see that what distinguishes the epistemic modal *fikil* from the canonical epistemic modals in JA, *mumkin* ‘may’ and *ʔakeed* ‘must’, is the presupposition of the indirect evidence requirement. Usually, the formal treatment of epistemic modality cross-linguistically is that the “accessibility relations between possible worlds are determined on the basis of the availability of evidence which comprises the set of propositions known to the speaker in the evaluation world” (Kratzer 1991:6). However, no finer distinctions are even made between the kinds of evidence underlying the inferences about propositions that are unknown to the speaker. It turns out, though, that distinguishing between the kinds of evidence involved in epistemic reasoning is important for natural languages (see Izvorski 1997).

We argue that epistemic modality system in JA splits into two realms with respect to the basis of epistemic reasoning/ inference: (a) *fikil* requires more restricted facts (i.e., some observable evidence or results of the causing event(s) upon which the inference is made by the speaker). (b) ordinary epistemic modals such as *yemkin/mumkin* ‘may’ and *ʔakeed* ‘must’ require logical and objective reasoning (i.e., speaker infers *P* based on pure mental reasoning such as basic intuition, logic, experience or other mental constructs) (cf. Nuyts 2001). Consider sentences (48-50), (51a-c) and (52a-c).

(48) *kul*    *ʔensaan*    *ʔakeed*    *raħ*    *y-moot*  
 every human    must    will-FUT    INF-3.S.M-die  
 ‘Every human must die sometime.’

(49) *kul*    *ʔensaan*    *yemkin*    *ʔay laħðʕa*    *y-moot*  
 every human    may    any moment    INF-3.S.M-die  
 ‘Every human may die any moment.’

(50) #*kul*    *ʔensaan*    *ʃikluh*    *raħ*    *y-moot*  
 every human    EV    will-FUT    INF-3.S.M-die  
 ‘Every human looks like to die sometime.’

(51) a. **Context: Osama, who lives in Abu Dhabi, came to visit Mohammed and Dima in Jordan. It is winter time now in Jordan. Osama spent a**



**week with them then he came back to Abu Dhabi. Now, Mohammed tells Dima:**

- b. ?akeed ?usama mkayef 3ala d-dafa hasa fee  
 Must Osama enjoy-ADJ on the-warmth now in  
 ?abu δ'abee  
 Abu Dhabi

'Osama must be enjoying the warm weather now in Abu Dhabi.'

- c. #fikluh ?usama mkayef 3ala d-dafa hasa fee  
 EV Osama enjoy-ADJ on the-warmth now in  
 ?abu δ'abee  
 Abu Dhabi

'Osama must be enjoying the warm weather now in Abu Dhabi.'

- (52) a. **Context: Osama, who lives in Abu Dhabi, came to visit Mohammed and Dima in Jordan. It is winter time now in Jordan. Osama spent a week with them then he came back to Abu Dhabi. He sent them photos of his enjoying the sunny weather in Abu Dhabi. Now, Mohammed is looking at the pictures and tells Dima:**

- b. ?? ?akeed ?usama mkayef 3ala d-dafa hasa fee  
 Must Osama enjoy-ADJ on the-warmth now in  
 ?abu δ'abee  
 Abu Dhabi

'Osama must be enjoying the warm weather now in Abu Dhabi.'

- c. fikluh ?usama mkayef 3ala d-dafa hasa fee  
 EV Osama enjoy-ADJ on the-warmth now in  
 ?abu δ'abee  
 Abu Dhabi

'Osama must be enjoying the warm weather now in Abu Dhabi.'

We can see that sentences in (48-50) concern the total truth of possibilities and necessities for the proposition (die) according to the requirement of logic, this is known in the literature as 'logical modality'. To put differently, the speaker bases his assertion on logical and objective reasoning concerning the proposition (die) which cannot be false given any circumstances according to the logic of reality. Only sentences (48 and 49) are felicitous under this reading. The marker *fikil* (50), on the other hand, is infelicitous. By the same token, in (51a), the speaker bases his inference about P (Osama enjoying the warm weather) on his logical reasoning and therefore only the ordinary epistemic modal *?akeed* (51b) is felicitous as compared to (51c) where *fikil* is not acceptable. However, when the same speaker obtains observable evidence for P as illustrated in context (52a), *fikil* becomes felicitous (52c). These findings lend support to a unified epistemic modality system in JA and a modal analysis for *fikil* as illustrated in Palmer (2006:25) who claims that "typology supports the notion that when there is a morphological contrast between simple speculation (without evidence/logical reasoning) and inference from

evidence, this typically indicates a possibility-necessity contrast i.e. epistemic modality system rather than evidentiality system” (see Peterson 2010 as well).

Additionally, the epistemic modal *fikil* contrasts with the ordinary epistemic modals in JA with regards to the core components of modality (i.e. modal base and modal force) according to possible worlds semantics (the most influential theory of modality cross-linguistically, Kratzer 1981, 1991). In JA, modal base for epistemic modals is specified contextually while modal force is specified lexically: the modal base for the epistemic modals *mumkin* ‘may’ and *?akeed* ‘must’ is epistemically or deontically assigned depending on the context; the quantificational force is, however, lexically assigned as weak/existential reading and strong/universal reading respectively. The modal *fikil*, on the other hand, lexically encodes an epistemic conversational background through a presupposition restricting the modal base as discussed earlier. Conversely, the modal force of *fikil* is contextually and variably identified as illustrated in contexts (53 and 54): JA speakers intuit that *fikil* denotes a weak/existential reading (i.e., epistemic possibility) in (53) but an epistemic necessity reading (strong/universal) in (54).<sup>2</sup>

(53) ?adam: juu s’aar maʕik beð’abt’ ?  
 what PAST-happen with-you exactly  
 ‘What happened exactly with you?’

deema:kunt bayassel wu fadʒ?a lageet haali 3al ?arDH  
 was wash and suddenly found me on the-ground  
 ‘I was washing and suddenly I found myself on the floor.’

?adam: t’aib, juu metwaqʕah ?elli s’aar maʕik?  
 well what predict-PART that PAST-happen with-you  
 ‘What do you expect/believe happened with you?’

deema:fikiluh raas’i ð’arab fel meysaleh, ma bʕref!  
 EV my-head PAST-hit in the-sink not know!  
 ‘Maybe my head bumped into the sink, I do not know for sure!’  
 = It is possibly true that my head bumped into the sink.

(54) a. **Context: Ahmad told me that he will come visit me at 4 P.M, he confirmed many times. It is 4 P.M now, the doorbell rings and it appears that someone looking like Ahmad is at the door. Now, Dima tells me:**

b. fikluh ?ahmad ?edʒa  
 EV-him Ahmad PAST-3.S.M-come  
 ‘Ahmad must have come.’  
 = It is necessarily true that Ahmad has come.

The table below summarizes the aforementioned findings and it also locates the modal *fikil* within the epistemic modality system in JA with respect to modal base (modality flavor), modal force (weak vs strong) and type of evidence required

for epistemic reasoning/inference; it also compares the behavior of JA epistemic modals with those in English. The findings in this table have many theoretical implications to the theory of modality and evidentiality in JA, Arabic dialects and cross-linguistically. It shows that epistemic modality system can be finer-grained into finer distinctions in terms of the propositions construed in the modal base (logical-reasoning vs observable evidence). Furthermore, the findings show that *variability of quantificational force* can be an integral part of the epistemic modality system in certain languages as it is the case with JA and most importantly quantificational force can be *contextually* rather than *lexically* specified. Cross-linguistically, it also shows that natural languages distinguish between the kinds of knowledge and evidence needed in the modal base and ultimately in epistemic reasoning (cf. Izvorski 1997).

Lexically/ Contextually modal base and modal force Versus Evidence Requirement

MODAL	MODAL BASE	MODAL FORCE	EVIDENCE REQUIRED
1. <i>mumkin/?akeed</i>	Contextual	Lexical/Fixed	Logical Reasoning
2. <i>fikil</i>	Lexical	Contextual/Variable	Observable Evidence
3. <i>English Modals</i>	Contextual	Lexical/Fixed	Logical Reasoning

## 6. Conclusion

In this paper we revisited the semantics of the marker *fikil* ‘it looks like/apparently’ in Jordanian Arabic which has been analyzed in previous literature as an indirect evidential. The findings of the paper call for a propositional-level rather than an illocutionary-level analysis and therefore it is concluded that *fikil* is amenable to a modal analysis. Cross-linguistically, the findings of the current paper lend further support to the unfolding literature that asserts the affinity and the heterogeneity of evidentiality and epistemic modality as two major semantic categories. At the same time, it poses serious challenge to the seminal works in evidentiality such as those of Aikhenvald (2004) and De-Haan (1999, 2004) who claimed that evidentiality is a homogenous category.

Furthermore, the paper provided evidence that epistemic modality system in JA can be finer-grained in terms of the propositions construed in the modal base as either logical reasoning-based or observable evidence-based inference. Such intriguing feature has been overlooked in possible world semantics (Kratzer 1991, 2012) but slightly reformed in the analysis advocated for *fikil* where the modal base has been argued to construe a presupposition restricting the propositions in the modal base to observable evidence only. In a similar vein, the paper showed that the modal *fikil* exhibits a peculiar behavior within JA epistemic modality system in that it lexicalizes the modal base and contextualizes the modal force and therefore

triggering a variable modal force reading. This stands in a sharp contrast with the Kratzerian typological perspective on modality.

Perhaps the aforementioned findings spark more questions about the interrelation between epistemic modality and evidentiality than it offers answers: one might wonder whether a unified semantic theory of evidentiality or epistemic modality is even tenable? or that these two categories are so heterogeneous that they don't even exemplify the same kind of meaning?! If we dare to claim that evidentiality is not tied to a specific level of meaning as pursued in this paper, wouldn't that put the major syntactic theories which postulate a fixed functional projection for evidentiality into major scrutiny (Cinque 1999, Speas and Tenny 2003)?!

### Endnotes

1. The theoretical foundation of the cancellation test has been compromised in the literature. The very same test as it stands falsely predicts that the epistemic necessity modal *must P* in English commits the speaker to the truth of P as shown by the infelicity of *must* under a cancellation test in (1); which leads to an unwarranted finding in formal and propositional logic semantics, that is *must P* is not weaker than *P* (cf. Kratzer 1981; Copley 2009; Von Stechow and Gillies 2007). Therefore, it was argued by Déchaine et al. (2017) that the infelicity of the denial of P does not necessarily mean that the speaker is committed to P. Furthermore, the theoretical assumptions of such tests have been reconsidered by more well-attested and alternative tests such as “actuality entailment” test (see Bhatt 1999; Hacquard 2006).

1. # The keys must be in my backpack, but they're not there.

2. We already have a preliminary formal semantic account for the modal *fikil* along with its variable quantificational force within possible world semantics (Kratzer 1981, 1991, 2012). However, to provide a fully-fledged formal account for the semantics and variable quantificational force of *fikil* within possible worlds theory and how it *formally* differs from other epistemic modals in JA needs a separate paper and no concise section can do any justice to cover all aspects of such analysis, especially with space and word-limits restrictions. Therefore, we leave this interesting and intriguing issue for future research (for typological data and discussion see Peterson 2010).

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