On the interrogative terms \(?addēʃ\) and \(kam\) in Syrian Arabic

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Abstract

This paper compares two interrogative terms—\(?addēʃ\) and \(kam\)—in Syrian Arabic. Both of these form questions about quantity. I argue, though, that \(?addēʃ\) and \(kam\) are fundamentally different both syntactically and semantically. \(?addēʃ\) can be separated from the term that contributes the scale it asks about, which is typical of degree operators in Syrian Arabic. Various scales are compatible with \(?addēʃ\). This makes \(?addēʃ\) similar to English \(how\) as in \(how\) \(high\), \(how\) \(fast\), \(how\) \(much\), etc. \(Kam\), on the other hand, combines only with a singular count noun and asks how many instances of the count noun denotation have the property the remnant sentence denotes. This, and syntactic and morphological parallels between \(kam\) and numerals in Syrian Arabic, point to the conclusion that \(kam\) is an interrogative numeral.

Keywords

degree – questions – superlatives – semantics – Syrian Arabic

1 Introduction

This paper compares two quantity interrogative terms in contemporary Syrian Arabic, which is representative of the Levantine dialects in the respects treated here. One term, \(?addēʃ\), is argued to be a direct counterpart to English \(how\) used in phrases like \(how\) \(smart\), \(how\) \(tall\), \(how\) \(much\), \(how\) \(many\) ..., although independent differences between the two languages in the syntax of degree modification obscure the resemblance to an extent. The other term, \(kam\), is argued to be a wh-numeral. The meanings of these two terms are more pro-
foundly different than the superficial similarity in function leads one to expect. In section 2, I describe the distribution and meaning of ?addēf and in section 3 the distribution and meaning of kam. Section 4 treats certain non-canonical uses of the two terms. The conclusion in section 5 attributes to ?addēf the status of a wh-degree operator and to kam the status of a wh-numeral.

2 ?addēf

The term ?addēf (sometimes pronounced ?addē)\(^1\) occurs at the beginning of a clause and is associated with some scalar term in its scope. The association is a syntactic one subject to structural constraints described in more detail below. In (1), for example, ?addēf associates with the gradable predicate adjective fāṭra ‘smart’.

(1) ?addēf mona fāṭr-a?!
    how Mona smart-\(\text{FS}\)
    i. ‘How smart is Mona?’
    ii. ‘How smart Mona is!’

As the translations to (1) indicate, (1) is ambiguous between a question asking what the degree of Mona’s smartness is and an exclamative statement expressing astonishment at the degree to which Mona is smart. Although ?addēf arguably plays a similar semantic role in the two readings, there are some reasons, discussed in section 4, to believe that the two readings do not share the same logical form. For that reason, I restrict myself here to the purely interrogative use of ?addēf and separate this reading from the exclamative reading in the discussion to follow by embedding ?addēf clauses under the root clause mā baʕrif ‘I don’t know’, as illustrated in (2). Since (2) explicitly denies knowledge of how smart Mona is, no exclamative reading expressing surprise at how smart she is is available, thus isolating the purely interrogative use of ?addēf.

\(^1\) This term is not attested in Classical Arabic, and to my knowledge its development is not documented in the historical record. It is morphologically composed of the components ?add (Classical qadd) ‘size/amount’, ?ē (Classical ʔayy) ‘which’ and, optionally, \(\bar{f}\), itself a shortening of \(f\) (Classical fāy) meaning ‘thing’. It therefore appears to be a permutation of something along the lines of ?ē (\(\bar{f}\)) ?add-u ‘which (thing) [is] size/amount-its’, i.e. ‘What is its size/amount?’. This composition does not seem to be obvious to linguistically naive native speakers, meaning that the term is very thoroughly grammaticalized into a lexical item in contemporary Syrian Arabic.
(2) mā b-a-ʕrif ʔaddēf mona ʃāṭr-a.
not IND-1S-know how Mona smart-FS
'I don't know how smart Mona is.'

ʔaddēf requires a scalar associate. If the sentence following it does not contain a gradable term, the result is interpretationally infelicitous. Since turning on the light, for example, is not gradable, ʔaddēf is not felicitous with this predicate, as (3) shows, where the adverb tlit marrāt ‘three times’ is inserted to preclude the possibility of ʔaddēf associating with a covert temporal adverb modifying ʃaʕʕal ‘turn on’, yielding an interpretation along the lines of ‘how many times’.

(3) *mā b-a-ʕrif ʔaddēf mona ʃaʕʕal-it ʔaddēf tlit
not IND-1S-know how Mona turned.on-3FS the-light three
marr-āt.
time-PL
*I don't know how much Mona turned on the light three times.'

The examples discussed so far suffice to demonstrate an immediately evident difference between English and Syrian Arabic: Arabic ʔaddēf can be linearly separated from its scalar associate, while the English counterpart how must be adjacent to it. Both ʔaddēf and how occur at the left edge of the clause, the typical position for wh-elements (interrogative phrases) in both languages. But English how is always immediately followed by its scalar associate, hence *How smart is she? rather than How smart is she? The standard analysis of English takes how to be a wh-degree operator which asks for the maximal degree to which some property holds (Rullmann, 1995; Beck and Rullmann, 1999). This term combines in the base structure with the term that denotes the property in question, illustrated in (4a). In the surface structure, the phrase how+scalar associate moves to the left edge, which in English in turn triggers subject-auxiliary inversion, illustrated in (4b).

(4) a. Mona is [how smart]
   b. [how smart]i is Mona ti

The scalar associate of how in English can be an adjective modifying a noun, as in (5). The derivation of the surface structure in (5c) appears to involve two

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2 This use is of course in addition to its use as an interrogative of manner, as in How did you fix the heater? Historical or perhaps synchronic connections between these two uses are worth investigating in their own right.
different permutations. First, *how* and the associated adjective move to the left edge of the noun phrase in which they occur (5b), and then that noun phrase is displaced to the clause-initial position for wh-phrases (5c).  

(5)  

   b. Step 1: Mona read [[how difficult], a t_i book]  
   c. Step 2: [[how difficult], a t_i book]_j did Mona read t_j  

There is no semantic justification for movement of the entire noun phrase when *how* combines with an adjective within the noun phrase. Such cases involve ‘pied-piping’ of the noun phrase for syntactic reasons (Ross, 1967; Horvath, 2006). Pied piping of the noun phrase is preceded by movement of *how* to the left edge of the noun phrase, which again involves pied piping of the adjective with which *how* combines. There is also no semantic justification for pied piping of the adjective in this step, nor, for that matter, pied piping of the predicate adjective with *how* in (4b). It appears that when *how* moves to the left periphery, it takes the minimal adjective phrase (as in (4b) and (5b)) or noun phrase (as in (5c)) that it occurs in with it.

A last remark about English is in order before returning to the Syrian Arabic facts. In the derivations sketch above, the scalar associate of *how* is an adjective. If the scalar term involved is not an adjective, *much* is inserted to fulfill what is apparently a selectional requirement of *how* (on its degree interrogative use), that it combine in the base structure with an adjectival category. For example, when we want to combine *how* with a nominal associate, like the mass noun *coffee*, we cannot do so directly, asking *How coffee did Mona drink*, but must first combine *how* with the dummy adjective *much* and then the result *how much* with the true scalar associate *coffee*, as in (6a) (Corver, 1997; Solt, 2015). Likewise when *how* has a verbal associate as in (6b).

(6)  

a. How *(much) coffee did Mona drink?  
   b. How *(much) does Mona deserve the prize?  

A well-know quirk of the dummy adjective in English is that when the associate of *how* is a plural count noun, *many* is inserted rather than *much*. This is apparently a syntactic sensitivity to the count/mass distinction in the noun with no obvious semantic consequences (both mass nouns and plural count nouns have *many* as their count associate).

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3 Step 1 might not be directly related to wh-movement; it takes place whenever the adjective has a pre-adjectival specifier of its own, as in *I read that difficult a book, too*. See Bresnan (1973).
nouns are scalar in the relevant way and accordingly combine with how with the mediating adjective).

(7) How *(many) books did Mona read?

As mentioned above, Syrian Arabic distinguishes itself in allowing the wh-degree operator ḥaddēf to be separated from its scalar associate. In what follows, I investigate the dependency between ḥaddēf and its scalar associate in detail and find that 1) it is subject to constraints on Α’ movement, and also that 2) the constraints are identical to those I have documented on a similar-looking displacement between the superlative term aktar ‘most’ and its scalar associate (Hallman, 2016). While movement is implicated in both contexts, there is at least some evidence that it is not ḥaddēf or aktar itself that moves, but a null operator that derives a degree predicate. At the very least, the discussion below shows that the displacement of ḥaddēf from its scalar associate seen in (2) and other examples below is not an idiosyncrasy of ḥaddēf, but a general property of degree constructions in Syrian Arabic.

In (2), ḥaddēf associates with a predicate adjective. Like English how, it may associate with a variety of other scalar terms. It may associate with a mass noun or plural count noun, parallel to (6a) and (7), as shown in (8). Note that no dummy adjective analogous to much/many is employed here. This already suggests that ḥaddēf need not combine with an adjective, unlike English how. Since ḥaddēf does not combine with an adjective, no dummy adjective is necessary when its scalar associate is non-adjectival.

(8) mā b-a-ʕrif ḥaddēf mona firb-īt (fanāzīn) ?ahwe l-yōm. not IND-1S-know how Mona drank-3FS (cups) coffee the-day
‘I don’t know how much coffee / how many cups of coffee Mona drank today.’

ḥaddēf may associate with a gradable adverb, including one expressed as a prepositional phrase, as shown in (9).

(9) mā b-a-ʕrif ḥaddēf mona kān-īt ʔam ti-sūʔ bi-surʕa not IND-1S-know how Mona was-3FS PROG 3FS-drive with-speed lamma waʔʔf-it-a ʃ-furṭa. when stopped-3FS-her the-police
‘I don’t know how fast Mona was driving at the time the police stopped her.’
ʔaddēʃ may associate with a gradable verb, as shown in (10).

(10) mā b-a-ʕrif ʔaddēʃ mona b-ti-stāhil l-ʒāyze.
    not IND-1S-know how Mona IND-3FS-deserve the-prize
    ‘I don’t know how much Mona deserves the prize.’

It may also associate with the ‘pluractional’ dimension of a non-gradable verb, where the degree it asks about is associated with a scale of frequency, duration or intensity, as illustrated in (11).

(11) mā b-a-ʕrif ʔaddēʃ mona dars-it la-l-fahs.
    not IND-1S-know how Mona studied-3FS for-the-test
    ‘I don’t know how much Mona studied for the test.’

In light of the possibility in (11), it is worth clarifying that the sentences cited above with other scalar associates are not on some level all parasitic on pluractionality. If Mona drinks coffee a lot (meaning in this case ‘often’), then she presumably drinks a lot of coffee, raising the specter that ʔaddēʃ really only ever associates with the verb, and other apparent associates are simply entailments of the pluractionality associate. But a plural object as well as other potential gradable terms are legitimate associates for ʔaddēʃ even in the absence pluractionality, which is particularly clear in the case of non-gradable stative predicates. Since one cannot ‘own cats a lot’, (12) can only be interpreted as talking about how many cats Mona owns. This means that the scalar associate of ʔaddēʃ in (12) is definitely the plural object, not the verb.

(12) mā b-a-ʕrif ʔaddēʃ mona ʕind-a ʔiṭat.
    not IND-1S-know how Mona at-her cats
    ‘I don’t know how many cats Mona has.’

All of these associations may cross a clause boundary (subject to island constraints, as described in more detail below). I demonstrate this on the basis of the adverbial associate illustrated in (9), but this example is representative; ʔaddēʃ may associate with any scalar associate over a clause boundary.

(13) mā b-a-ʕrif ʔaddēʃ b-ti-txayyal ʔinnu mona kān-it
    not IND-1S-know how IND-2MS-imagine that Mona was-3FS
    ʃam ti-sū? bi-surʕa lamma waʔʔf-it-a ʃ-fuṛta.
    PROG 3FS-drive with-speed when stopped-3FS-her the-police
    ‘I don’t know how fast you think Mona was driving at the time the police stopped her.’
There is evidence that the relation between ʔaddēʃ and its scalar associate is a syntactic dependency with properties of non-argument (A′) chains. The dependency may not cross over syntactic boundaries that are known to restrict A′ movement in English. For example, ʔaddēʃ may not associate with a scalar associate in an adjunct clause, shown in (14a), or a factive complement clause, shown in (14b), among other types of syntactic islands.

(14) a. mā b-a-ʕrif ʔaddēʃ kān karīm xāyif lamma mona not IND-1s-know how was Karim afraid when Mona sāʔ-it bi-surʕa.
drove-3FS with-speed
‘I don’t know how afraid Karim was when Mona drove fast.’
*I don’t know how fast Karim was afraid when Mona drove.’

b. mā b-a-ʕrif ʔaddēʃ karīm kān mistayrib innu mona kān-it not IND-1s-know how Karim was-3FS was ti-sūʔ bi-surʕa.
PROG 3FS-drive with-speed
‘I don’t know how surprised Karim was that Mona was driving fast.’
*I don’t know how fast Karim was surprised that Mona was driving.’

In addition to garden-variety constraints on A′ chains, the relation between ʔaddēʃ and its scalar associate cannot cross over a noun phrase boundary. Although a potential scalar associate ʂaʕbe ‘difficult’ is available in (15), it is contained in the noun phrase (masʔale ʂaʕbe) that ʔaddēʃ is external to. Hence, the only available reading for (15) is one in which ʔaddēʃ locally associates with the plu-ractionality of the verb ħall ‘solve’.

(15) mā b-a-ʕrif ʔaddēʃ mona ħall-it masʔale ʂaʕbe.
not IND-1s-know how Mona solved-3FS problem difficult.
‘I don’t know how much Mona solved a difficult problem.’
*I don’t know how difficult a problem Mona solved.’

A particularly curious restriction on the use of ʔaddēʃ is that although it can associate with a plural noun phrase in principle, as in (8), and with an adverbial phrase in principle, as in (9), it may not associate with a plural noun used adverbially, as (16) demonstrates, where marrāt ‘times’ is the potential associate.

(16) *mā b-a-ʕrif ʔaddēʃ mona rāḥ-it la-miṣr marr-āt.
not IND-1s-know how Mona went-3FS to-Egypt time-PL
‘I don’t know how many times Mona went to Egypt.’
Whatever the explanation for (16), the observation that the dependency between ʔaddēʃ and its scalar associate is subject to configurational constraints indicates that it is a syntactic dependency. That some of these constraints are typical constraints on A’ movement suggest that ʔaddēʃ moves from a position local to its scalar associate to its surface position at the left clause edge. In Syrian Arabic, unlike English, this transformation does not pied pipe the scalar associate. A comparison of the behavior of ʔaddēʃ with the Syrian Arabic superlative term aktar ‘most’ casts some light on the reason for the absence of pied piping in Syrian Arabic degree questions. The following remarks compare the description of aktar ‘most’ in Hallman (2016) with the description of ʔaddēʃ above. I claim that extending the analysis of superlatives to ʔaddēʃ sheds some light on the proper analysis of displacement in degree questions.

The superlative term aktar ‘most’ always directly precedes a noun phrase and associates with a scalar term inside that noun phrase, either an adjective modifying the head noun or a scalar term inside a modifier of the noun, such as a relative clause. In (17), aktar is appended to the noun phrase wahde fāṭra bi-ṣ-ṣaff, literally ‘one smart in the class’, and associates with the scalar term fāṭra ‘smart’. The phrase so derived refers to the entity meeting the description ‘smart one in the class’ to a greater degree of smartness than anyone else with that description. In this case, aktar associates with an adjective (fāṭra ‘smart’) modifying the noun (wahde ‘one’) that aktar ‘most’ directly precedes. As this example shows, aktar, like ʔaddēʃ, can be separated from its scalar associate.

(17) mona ʔaktar wahd-e fāṭr-a bi-ṣ-ṣaff.  
Mona most one-FS smart-FS in-the-class  
‘Mona is the smartest one in the class.’

Like ʔaddēʃ, the scalar associate of aktar may be a mass or plural noun, as (18) shows.

(18) mona ʔaktar wahd-e firb-it (fanāzīn) ʔahwe.  
Mona most one-FS drank-3FS (cups) coffee  
‘Monda drank the most (cups of) coffee.’

Also like ʔaddēʃ, the associate may be an adverbial phrase, such as bi-surʕa ‘with speed’ in (19).
Superlative *aktar* may also associate with a gradable verb, as (20) shows.

(20) mona ʔaktar wahde b-ti-stāhil l-ʒāyze.
Mona most one-FS IND-3FS-deserve the-prize
‘Mona deserves the prize the most.’

And the dependency between *aktar* and its scalar associate may cross over a clause boundary, as (21) shows.

(21) mona ʔaktar wahde b-ti-txayyal ʔinnu karīm kān ʕam yi-sūʔ lamma mona sāʔ-it
Mona most one-FS IND-3FS-thinks that Karim was PROG drive with-speed
‘Mona thinks that Karim drove the fastest.’

Yet, as in the case of *ʔaddēʃ*, the dependency may not cross over an island for *A*’ movement, such as an adjunct island in (22a) or a factive island in (22b). The ungrammatical reading of (22a) asserts that everyone was afraid because Mona drove at a certain speed, and that Karim's speed (the speed such that Karim was afraid because Mona drove that fast) was the greatest; the ungrammatical reading of (22b) asserts that everyone was surprised that Mona drove a certain speed, and Karim's speed (the speed such that Karim was surprised that Mona drove that fast) was the greatest.

(22) a. karīm ʔaktar wāhid kān xāyif lamma mona sāʔ-it
Karim most one was afraid when Mona drove-3FS
with-speed
‘Karim was the most afraid when Mona drove fast.’
*Karim was afraid when Mona drove the fastest.’ (everyone else was afraid when she drove at lower speeds)

b. karīm ʔaktar wāhid kān mistayrib ʔinnu mona sāʔ-it
Karim most one was surprised that Mona drove-3FS
with-speed
‘Karim was the most surprised that Mona drove fast.’

*Karim was surprised that Mona drove the fastest.* (everyone else was surprised that she drove at lower speeds)

Further, the association between aktar and its associate may not cross over a noun phrase boundary, as (23) shows, where aktar is unable to take ṣaʕbe ‘difficult’ as a scalar associate to mean that Mona solved the most difficult problem, because ṣaʕbe is buried in the noun phrase masʔale ṣaʕbe ‘difficult problem’.

(23) *mona ?aktar wahd-e hall-it masʔale ṣaʕbe.*
Mona most one-FS solved-3FS problem difficult.
‘Mona solved the most difficult problem.’

The meaning that (23) may not express can be expressed by appending aktar to the noun phrase masʔale ṣaʕbe ‘difficult problem’, as in (24a). Since aktar is itself part of the noun phrase projected by the noun masʔale in this case, the dependency between aktar and the adjective ṣaʕbe does not cross over a noun phrase boundary. Note that under this circumstance, the adjective may morphologically fuse with the superlative in the pre-nominal position, as (24b) illustrates.

(24) a. *mona hall-it aktar masʔale ṣaʕbe.*
Mona solved-3FS most problem difficult.
‘Mona solved the most difficult problem.’

b. *mona hall-it aṣʕab masʔale.*
Mona solved-3FS difficult-est problem.
‘Mona solved the most difficult problem.’

Lastly, although aktar may associate with a plural noun, as in (18), and with an adverb, as in (19), it may not associate with a plural noun used adverbially, such as marrāt ‘times’ in (25).

Mona most one-FS went-3FS to-Egypt time-PL
(Mona went to Egypt the most times.)

These constraints are of course identical to those documented for ʔaddēʃ above. As in the case of ʔaddēʃ, an analysis suggests itself at first glance accord-
ing to which aktar moves from a position adjacent to the scalar associate to its derived position, pre-nominal in the case of aktar, and sentence-initial in the case of ʔaddēʃ. However, I claim in Hallman (2016) that it is not actually aktar itself that moves, but rather a null operator that derives a degree predicate, which serves as the semantic argument of aktar. Aktar itself is base generated in its surface position at the edge of this degree predicate. This claim is based on the observation that aktar does not display reconstruction effects, as would have been expected if it itself underwent A′ movement. While I will not reiterate the reconstruction argument for aktar here, I point out that there is at least one piece of evidence specific to ʔaddēʃ that indicates that ʔaddēʃ is base generated at the left clause edge, rather than in a position adjacent to its scalar associate.

The claim that ʔaddēʃ is base generated at the left clause edge predicts that ʔaddēʃ should never occur ‘in situ’, even though Arabic admits wh-in situ relatively readily (see Wahba 1984 on Egyptian Arabic, Ouhalla 1996 on Iraqi, and Aoun et al. 2010 on Lebanese Arabic, closely related to Syrian). For example, (26a), with mīn ‘who’ in its base position, can (with rising intonation on mīn) be interpreted as the same question as (26b), where mīn has moved to clause-initial position, pied piping the preposition that governs it.

(26) a. ḥkī-tu maʕ mīn l-yōm?
    talked-2PL with who the-day
    ‘Who did you talk to today?’

    b. maʕ mīn ḥkī-tu l-yōm?
    with who talked-2PL the-day
    ‘Who did you talk to today?’

But ʔaddēʃ cannot occur in a position local to its scalar associate, as (27a) shows; it must occur at the left clause edge as in (27b). So as predicted, ʔaddēʃ does not occur in situ. I place ʔaddēʃ after the associated mass noun in the hypothetical (27a), since modifiers generally follow the noun they modify in Arabic, but a pre-nominal placement for ʔaddēʃ does not improve the judgment.

(27) a. *frib-tu ʔahwe ʔaddēʃ l-yōm?
    drank-2PL coffee how the-day?
    (‘How much coffee did you drink today?’)
b. ʔaddēʃ ʃrib-tu ʔahwe l-yōm?
   how drank-2PL coffee the-day?
   ‘How much coffee did you drink today?’

That fact that ʔaddēʃ never occurs in situ in a language that allows wh-in-situ in principle supports the claim that ʔaddēʃ is base generated at the left clause edge. This also immediately explains why ʔaddēʃ does not pied pipe any other material to the left edge—it does not move to the left edge at all, but is base generated there. What moves in degree constructions is a null operator (Op in (28)) that derives a predicate over degrees that functions as the semantic argument of ʔaddēʃ. Examples with ʔaddēʃ, then, have the structure illustrated in (28), where Op moves but ʔaddēʃ is generated its surface position.

(28) ʔaddēʃ Op₃ Mona d-fāṭ-r-a
   how Mona d-smart-FS
   ‘How smart is Mona?’

These observations indicate that separation of ʔaddēʃ from its scalar associate in Syrian Arabic is not specific to the lexical item ʔaddēʃ but rather is a general property of degree constructions in this language. The separation is made possible by the existence of a null operator that derives a degree predicate from a constituent containing a scalar term. Degree predicate abstraction requires movement of the null operator, which is subject to constraints on movement. As a result, ʔaddēʃ and superlative aktar may be separated from their scalar associates, but it is not ʔaddēʃ and aktar that move, but rather the null operator responsible for degree predicate abstraction in Syrian Arabic. I turn now to a comparison of the behavior of ʔaddēʃ with that of kam, and find they are fundamentally different.

3 Kam

The Syrian Arabic term kam also occurs at the left clause edge. It combines with a singular count noun, which I refer to as its ‘restriction’, and derives a wh-phrase asking how many instances of the restriction denotation have the property described by the remnant sentence, as illustrated in (29). As such, it has a superficial similarity to ʔaddēʃ, which also asks about quantity. In spite of

4 While ʔaddēʃ is a neologism of uncertain age, kam is inherited from Classical Arabic, where it had a use and meaning essentially identical to that of its modern cognate.
the similarity in function to English *how many*, I claim that *kam* is not a degree modifier like *how or ?addēf*. I gloss *kam* as ‘#’ for reasons that will be clear shortly. Like *?addēf*, *kam* potentially has an exclamative use that I preempt by placing the interrogative clause under *mā baʕrif* ‘I don’t know’. I return to the exclamative use in section 4.

(29) *mā b-a-ʕrif kam ktāb ʔara t-ṭullāb.*
not IND-1S-know # book read the-students
‘I don’t know how many books the students read.’

Unlike *?addēf*, *kam* cannot be separated from its restriction, whether this is singular or plural, as (30) shows.

(30) *mā b-a-ʕrif kam ʔara t-ṭullāb ktāb/kitub.*
not IND-1S-know # read the-students book/books
(I don’t know how many books the students read.)

The term *kam* may not apply to any other gradable term, such as the predicate adjective in (31a), nor even a mass noun, as shown in (31b). Various other potential associates such as gradable verbs and adverbs are also not compatible with *kam*.

(31) a. *mā b-a-ʕrif kam ḟāṭr-a mona.
not IND-1S-know # smart-FS Mona
(I don’t know how smart Mona is.)

b. *mā b-a-ʕrif kam ʔahwe ḥirb-it mona.
not IND-1S-know # coffee drank-3FS Mona
(I don’t know how much coffee Mona drank.)

The phrase consisting of *kam* and the singular count noun associate is displaced as a constituent from the canonical argument position of the count noun. For example, *ktāb* ‘book’ is interpreted as the theme of the relation *ʔara* ‘read’ in (29), but does not appear in the canonical post-verbal position for objects. Rather, it occurs in the canonical sentence-initial position for wh-elements. Aoun et al. (2010) claim that the phrase *kam+NP* moves from the canonical argument position of the NP to the clause initial position subject to constraints on A′ movement. It is unbounded in principle, as (32a) shows, but may not cross a factive island boundary as illustrated in (32b), among other barriers to movement.
(32) a. mā b-aʕrif kam ktāb b-ti-txayyal innu mona
not IND-1S-know # book IND-2MS-imagine that Mona
ʔar-it.
read-3FS
‘I don't know who many books you think Mona read.’

b. *mā b-aʕrif kam ktāb kin-t mistayrib innu mona
not IND-1S-know # book were-2MS surprised that Mona
ʔar-it.
read-3FS
(‘*I don't know how many books you were surprised that Mona read.’)

The fact that kam bears a close syntactic relationship to its NP restriction and
the fact that the constituent so formed is separated from the canonical argument position of the NP indicates that kam is combined with its NP restriction in the base structure. Movement of kam to the canonical left-peripheral position of wh-elements pied pipes the restriction. This displacement is, as ever, subject to constraints on A’ movement. Two pieces of evidence support the view that kam+NP moves from an argument position to the left periphery. One is that this displacement not only pied pipes the nominal restriction of kam, but may also pied pipe a preposition, if kam+NP occurs in a prepositional phrase, as (33) illustrates. Here, kam ʒabal ‘how many mountains’ occurs in a prepositional phrase headed by ʕala ‘on’ (‘climb’ is expressed literally as ‘ascend on’). The entire constituent ʕala kam ʒabal occurs clause-initially here. That is, movement of kam has pied piped the whole prepositional phrase containing it. Since the preposition ʕala ‘on’ is selected lexically by the verb talaʕ ‘climb’, and selection takes place in the base structure (Chomsky, 1981), the grammaticality of (33) supports the view that kam+NP moves from an argument position to its surface clause-initial position.

(33) mā b-aʕrif ʕala kam ʒabal talaʕ-it mona.
not IND-1S-know on # mountain climbed-3FS Mona
‘I don't know how many mountains Mona climbed’

A second piece of evidence supporting the view that kam+NP originates in the argument position of the NP and moves in the surface structure is that like other wh-phrases in Syrian Arabic, it may occur in situ, as Aoun et al. (2010) show. Like mīn ‘who’ in (26a) and unlike ʔaddēʃ, kam+NP does not occur obligatorily at the left clause edge, but may occur in the canonical position of the NP, as (34) shows (compare ʔaddēʃ in (27a)). Since the wh-element in situ prefers to
have matrix scope, I omit the embedding phrase mā baʕrif ‘I don’t know’ here, since negation would represent a barrier to movement.

(34) ṭarī-t kam ktāb l-yōm?
    read-2ms # book the-day?
    ‘How many books did you read today?’

As this description makes evident, kam has little in common with ʔaddēʃ. ʔaddēʃ is a general purpose interrogative degree modifier that asks to what degree some scalar property holds. The scale may be contributed by any gradable term, including plural nouns. ʔaddēʃ does not itself combine with its scalar associate. It is base generated at the left clause edge and applies to a degree predicate created by movement of a covert degree operator from the scalar associate. Kam, on the other hand, is highly specialized. It combines only with a singular count noun and nothing else. This is particularly odd since singular count nouns cannot function as scalar associates for ʔaddēʃ, as (35) shows.

(35) *mā b-a-ʕrif ʔaddēʃ ṭar-it mona ktāb.
    not IND-1s-know how read-3FS Mona book
    (*‘I don’t know how much book Mona read.’)

This indicates that singular count nouns do not have a scale built into their meaning, which stands to reason: it is pluralization that builds a denotation whose elements can be ordered on a scale of quantity (Link, 1983; Lønning, 1987). This makes it all the more puzzling that kam combines exclusively with singular count nouns, and indicates that what kam does semantically is not on par with what ʔaddēʃ does semantically. One fact in particular suggests that kam is not a degree modifier. Even when it combines with a singular count noun, as it must, it may not associate with a scalar term modifying that noun, as for example the superlative may. Compare (24a), repeated in (36a) below, where aktar associates with the adjective modifying the singular noun it precedes, to (36b), where kam also precedes a singular noun but cannot associate with an adjective modifying that noun. Example (36b) may only ask how many difficult problems Mona solved, not how difficult the problem was.

(36) a. mona ḥall-it aktar masʔale ṣaʕbe.
    Mona solved-3FS most problem difficult.
    ‘Mona solved the most difficult problem.’
b. kam masʔale šaʔbe hall-it mona?
     # problem difficult solved-3FS Mona
     ‘How many difficult problems did Mona solve?’
     *‘How difficult a problem did Mona solve?’

While *kam* has little in common with *ʔaddēʃ* (other than being a wh-word), it does have quite a lot in common with numerals in Syrian Arabic. While the numerals *three* through *ten* in Syrian Arabic combine with a plural noun, this format is limited to these numerals and has no generality. The infinitely many numerals above ten combine with a singular noun, as *kam* does. This noun must of course be a count noun, since it is characteristic of mass nouns that they do not consist of discrete components that can be counted.5

(37) a. mona firb-it tlit *(fanāzīn) ?ahwe.
     Mona drank-3FS three *(cups) coffee
     ‘Mona drank three cups of coffee.’

b. mona firb-it tliṭṭaʕʃ *(finʒān) ?ahwe.
     Mona drank-3FS thirteen *(cup) coffee
     ‘Mona drank thirteen cups of coffee.’

Another commonality between *kam* and the numerals is somewhat more subtle. Ouwayda (2013, 2014, 2017) reports that in the closely related Lebanese dialect, a subject modified by a numeral above 10 may trigger either plural or singular agreement on the verb, plural reflecting the ‘real’ number of the subject and singular its grammatical number. She reports that the singular agreement, marked by the absence of the plural suffix -u in (38), is obligatorily distributive; the sentence then can only be read to mean that each boy ate an entire cake of his own. The plural agreement is compatible with a collective reading in which the boys shared a cake.

5 Classical Arabic *kam* shares this combinatorial restriction but displays an additional similarity to the numerals that cannot be replicated in modern Arabic. In the context of both numerals (above ten) and *kam*, the singular nominal restriction is marked by accusative case, regardless of the case associated with the grammatical function of the phrase as a whole. The Classical Arabic case morphology is not preserved in contemporary Arabic.

(i) a. zayd-un qaraʔ-a ɓalābata ʕaʃara kitāb-an.
     Zayd-NOM read-3MS three ten book-ACC
     ‘Zayd read thirteen books.’

b. kam kitāb-an qaraʔ-a zayd-un?
     # book-ACC read-3MS Zayd-NOM
     ‘How many books did Zayd read?’
Some of the Syrian Arabic speakers consulted for this work do not accept singular agreement in (38), but others do; it appears to be a point of idiolectal variation. But those that do also allow this optionality with kam, and the distinction between singular and plural tracks the distributive/collective distinction that Ouwayda describes for (38). In the absence of the plural suffix -u in (39), the sentence can only be asking how many boys each ate an entire cake of their own. A situation in which they shared a cake calls for plural agreement.

This observation predicts that singular agreement is incompatible with collective predicates such as those containing a reciprocal pronoun. That this prediction is correct is shown in (40).

The fact that the judgments for kam accurately track the judgments reported by Ouwayda about numerals in Lebanese lends support to the claim that kam is a numeral. One last point supports the claim that kam is a wh-numeral. Kam may occur with a ‘scalar’ noun such as age, height or speed, as seen in (41). In this case, it typically occurs without an overt restriction.

<table>
<thead>
<tr>
<th>(38)</th>
<th>tlētēn wālād aḵaḵ-ḵā / ?ālib gāteu kāmīl.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>thirteen boy ate-(3PL) pie cake whole</td>
</tr>
<tr>
<td></td>
<td>‘Thirteen boys ate a whole cake.’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(39)</th>
<th>kām wālād aḵaḵ-ḵā / ?ālib gāteu kāmīl?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># boy ate-(3PL) pie cake whole</td>
</tr>
<tr>
<td></td>
<td>‘How many boys ate a whole cake?’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(40)</th>
<th>kām wālād bī-š-ṣaff / b-yā-hk-u inkīlīzī</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># boy in-the-class IND-3MS-speak / IND-3-speak-PL English</td>
</tr>
<tr>
<td></td>
<td>maʕ baʕḍ? with RECIP</td>
</tr>
<tr>
<td></td>
<td>‘How many boys in the class speak English with each other?’</td>
</tr>
</tbody>
</table>

| (41) | a. kām ʕūmr-u? | |
|------|----------------|
|      | # age-his      |
|      | ‘How old is he?, lit. ‘What is his age?’ |

<table>
<thead>
<tr>
<th>b. kām tūl-u?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># height-his</td>
</tr>
<tr>
<td></td>
<td>‘How tall is he?, lit. ‘What is his height?’</td>
</tr>
</tbody>
</table>
c. kam surṣīt l-muʕālaʒe?
# speed the-processor
‘How fast is the processor?’, lit. ‘What is the speed of the processor?’

Here, kam does not have an overt restriction, and at first glance, examples like those in (41) might look like association between ‘bare’ kam and a scalar term. But in all such cases, the remnant following kam does not constitute a complete sentence, unlike all the examples with ʔaddēʃ discussed above. The phrase ʕumr-u ‘his age’ cannot be used alone as a sentence; it requires a predicate, that appears at first glance to be missing in (41). But the fact that these expressions require a predicate implicates kam as the predicate in these cases, the only other constituent present here. This makes sense, because these questions can be answered by a bare numeral, which is precisely what I claim kam signifies.

(42) a. ʕumr-u tlēt (sane).
   age-his [is] thirty (year)
   ‘His age is thirty (years).’

   b. ṭūl-u miya wa tmānīn (sentimētir)
   height-his [is] hundred and eighty (centimeter)
   ‘His height is one hundred and eighty (centimeters).’

   c. surṣīt l-muʕālaʒe tlēt (GHz).
   speed the-processor [is] tlēt (GHz)
   ‘The speed of the processor is 3 (GHz).’

This pattern suggests that in the sentences in (41), kam, apparently together with a null restriction, is base generated in the predicate position and moves to the left clause edge, as illustrated in (43), where (43a) represents the base structure and (43b) the surface structure. The possibility of kam combining with a null restriction is apparently related to its occurrence as a predicate, rather than an argument, in examples like (41).

(43) a. ʕumr-u [kam NP]

   b. [kam NP], ʕumr-u t_i

Note that in English, how may not be used in contexts like those illustrated in (41) for Syrian Arabic, neither alone nor in combination with much or many.
(44) a. *How (much/many) is his age?  
    b. *How (much/many) is his height?  
    c. *How (much/many) is the processor’s speed?

Here, only the general predicate wh-word what can be used, the same wh-word used in questions like What is he? (answer: a linguist, impetuous, etc.).

(45) a. What is his age?  
    b. What is his height?  
    c. What is the processor’s speed?

The fact that the use of kam in (41) corresponds to the use of the predicate wh-word what in (45) reinforces the claim that kam is the predicate in examples like (41) and that kam does not correspond to the English degree-interrogative word how. How corresponds to ?addēf. Kam, on the other hand, is a wh-numeral with no counterpart in English. To express propositions like those in (41), English either uses the degree-interrogative how in combination with an adjective (How old is he?) or the predicate-interrogative what (What is his age?). No wh-numeral is available in English.

4 Two shared uses of ?addēf and kam

Aoun et al. (2010) claim that ?addēf may occur in situ, like kam and unlike what I have claimed here, citing examples like (46). This example differs from those cited above with ?addēf in that the term ?addēf functions as an argument of the verb dafaʕ ‘pay’, rather than a modifier of a scalar term. One of the arguments of dafaʕ ‘pay’ is the amount paid, and ?addēf can apparently function as a wh-stand in for this argument.

(46) b-ti-txayyal innu dafaʕ ?addēf li-s-siyāra?  
    IND-2MS-imagine that paid how.much for-the-car  
    ‘How much do you think he paid for the car?’

That ?addēf functions here as an NP representing an amount is supported by the fact that in such contexts, it may also occur in a prepositional phrase, and pied pipe the prepositional phrase to the clause edge, analogous to what kam does in examples like (33). The verb ftara ‘buy’ also has an amount argument, but introduces it with the preposition bi-, corresponding in this case to English ‘for’.
This appears to be a different use of ʔaddēʃ that the use as a degree modifier discussed in detail in section 2. It represents a use, however, that kam also has, since kam can replace ʔaddēʃ in the examples above with no change in meaning.

(48) a. b-ti-txayyal innu dafaʕ kam li-s-siyāra?
   IND-2MS-imagine that paid how.much for-the-car
   ‘How much do you think he paid for the car?’

   b. bi-kam mona fiṭar-it s-siyāra?
   for-how.much Mona bought-3FS the-car
   ‘For how much did Mona buy the car?’

So while ʔaddēʃ is fundamentally a wh-degree modifier and kam fundamentally a wh-numeral, both may occur as arguments where they are interpreted as a variable over quantities, perhaps bound by a clause-initial covert interrogative operator. The relation between this use and their canonical uses described in sections 2 and 3 warrants further investigation.

I end this discussion by returning to a promissory note from section 2. The exclamative use that ʔaddēʃ has in sentences like (1), repeated in (49a), is shared by kam, as (49b) shows, though kam is perceived to represent a higher register here. In these examples, I gloss kam as ‘how’, since it does not have its usual wh-numeral use here.

(49) a. ʔaddēʃ mona fāṭr-a!
   how Mona smart-FS
   ‘How smart Mona is!’

   b. kam mona fāṭr-a!
   how Mona smart-FS
   ‘How smart Mona is!’

This fact indicates that kam actually is able to bind a degree variable in its scope, like ʔaddēʃ does, but may only derive an exclamative reading, not an interrogative reading. While I cannot offer an explanation for the restriction of degree-modifying kam to exclamative contexts, this restriction suggests that
exclamatives and interogatives are different in some crucial way, such that degree-modifying kam is admitted in the former but not the latter. The fact that these seem to have different logical forms justifies the efforts made in the presentation of data above to exclude the exclamative reading and focus on the interrogative reading. How the interrogative reading is related to the exclamative reading must await an investigation of its own.

5 Conclusion

The Syrian Arabic terms ?addēf and kam seem at first glance to perform a similar function, deriving a question asking about quantity. But the data discussed above indicates that they are very different syntactically and semantically, and that it is ?addēf that corresponds to the English wh-word how used as a degree interrogative. ?addēf is base generated in the left periphery of the clause and the rest of the clause is construed as a degree predicate. This degree predicate is derived by movement of a null operator from a degree-argument position to a position subjacent to ?addēf, as illustrated in (50a). Kam, on the other hand, is a wh-numeral that, like other numerals, combines with a singular count noun and moves to the left periphery, piep piping its restriction and potentially additional material, as illustrated in (50b). Only ?addēf is a degree operator; kam is syntactically a numeral and semantically a variable over numbers, perhaps bound by a covert clause-initial interrogative operator. See Hamblin (1973), Karttunen (1977) on the semantics of questions in general.

(50) a. ?addēf Op_d ?ar-it mona kitub_d ?
   how read-fs Mona books
   ‘How many books did Mona read?’

   b. [kam ktāb]_i ?ar-it mona t_i ?
   # book read-fs Mona
   ‘How many books did Mona read?’

The similarity between ?addēf and English how is obfuscated to an extent by the possibility for ?addēf to be displaced from its scalar associate, something that is not possible in English. However, the discussion of superlatives in section 2 shows that this is not an idiosyncrasy of ?addēf, but rather a general property of degree constructions in Syrian Arabic. Arabic has a null operator that forms degree predicates subject to constraints on movement. English lacks this lexical item. Consequently, degree operators may appear at a dis-
tance from their scalar associate in Syrian Arabic but not English. From an English perspective, the distribution of ʔaddēʃ and kam in Syrian Arabic but not English. Arabic differs from English more substantially in possessing a wh-numeral, which to my knowledge is typologically uncommon.

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